DOCUMENT RESUME

ED 143 420 PS 009 385

AUTHOR Choate, Robert B., Comp.; Engle, Pamela C., Comp.
TITLE Edible TV: Your Child and Food Commercials.
INSTITUTION Council on Children, Media, and Merchandising, Washington, D.C.
PUB DATE Jun 77
NOTE 105p.

EDRS PRICE MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS *Children; Early Childhood Education; Eating Habits; *Federal Government; *Nutrition; *Television Commercials; *Television Research
IDENTIFIERS *Federal Trade Commission

ABSTRACT

This document reports on the impact of television food commercials on children under 12, focusing specifically on how commercials influence children's food preferences and concepts, how they affect children's knowledge of nutrition, and how they contribute to obesity. Part I is a compilation of short excerpts from relevant testimony before the Federal Trade Commission (FTC), 1976-77. Included are witnesses' remarks on the above issues and comments concerning ways to make television a more educational medium in matters pertaining to food selection. Part II contains (1) a synopsis of the 1976 testimony of Robert B. Choate dealing with the frequency and content of food commercials directed toward children, and (2) a report on a developmental study of the use of graphics to convey nutritional information to children aged 4 to 10. (SB)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED143420

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

EDIBLE TV:

YOUR CHILD AND FOOD COMMERCIALS

PART I

A compilation of relevant testimony
before the Federal Trade Commission -- 1976-77

Compiled and edited by

Robert B. Choate

Pamela C. Engle

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Robert B. Choate

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND THE ERIC SYSTEM CONTRACTORS"

A report of the
Council on Children, Media and Merchandising
1346 Connecticut Avenue NW
Washington, D.C. 20036

Telephone: 202-466-2583

June 1977

PS 009385

The Council on Children, Media and Merchandising is a non-profit, Washington-based consumer group concerned with the protection of children in the marketplace. We direct much of our attention to television advertising, for it is children's principal exposure to commercial persuasion.

In 1951 television reached into about half the homes in the United States. Today over 97% of our homes have television; over 41% have two or more sets. Children watch about 25 hours a week on the average, and many children spend more time per week in front of the tube than they do in school.

10-15% of children's television viewing is on weekend mornings when they are a majority of the audience. 85-90% of their viewing occurs in late afternoon and early evening when adults constitute a majority.

Foods and beverages are television's most frequently advertised products; product emphasis may change according to time of day, but food advertising is omnipresent. The Council estimates that a moderate TV-watching child potentially sees between 8,500 and 13,000 food and beverage commercials each year. This document reports on the impact of these commercials on children under 12.

Part I -- A compilation of relevant testimony before the Federal Trade Commission...page 1.

Part II -- A synopsis of the testimony of Robert B. Choate, President of the Council on Children, Media and Merchandising, before the Federal Trade Commission...page 73.

INTRODUCTION

The Federal Trade Commission, as a regulatory agency, is charged with the responsibility of determining falsity, unfairness or deception in advertising, and its rulemaking has the force of law. From July, 1976 through January, 1977, the Commission conducted hearings on a proposed Food Advertising Trade Regulation Rule, in San Francisco, Chicago, Dallas and Washington, D.C. In part, the proposed Rule would place constraints on the use of such terms as "natural", "organic" and "health food"; it would limit claims concerning cholesterol, fats and fatty acids; and it would require clarification of the terms "energy" and "food energy" in food advertising. The hearings completed in January comprise Phase I of a three-phase series; Phase II is scheduled to be held late in 1977.

The Council on Children, Media and Merchandising received a grant from the FTC's Magnuson-Moss funds to represent children's interests in these proceedings. (These funds were set aside to make possible the participation of consumer advocacy groups in such rulemakings.) The Council called witnesses to testify, and commissioned research in support of its position. The following issues are of main concern to the Council:

CHILDREN AND FOOD ADVERTISEMENTS ON TELEVISION

What role do food advertisements play in the development of children's food concepts? How are food advertisements produced to attract and hold the attention of children? What information do children obtain from food ads, and what information is not included, or is incomprehensible to them?

CHILDREN AND FAMILY FOOD SELECTION

Do advertisements affect children's food preferences? How much food buying do children do on their own, and how much do they influence family food buying patterns?

CHILDREN AND NUTRITIONAL TERMINOLOGY

Do children understand such terms as calorie, energy, nutrients, protein, carbohydrates, fat, etc.? Could they be helped to understand such terms?

CHILDREN AND NUTRITION INFORMATION

Where do children get nutrition information, and how much of their knowledge comes from food advertising on television? Could food advertising be used as a vehicle for the dissemination of nutrition information? Would graphics be a useful tool in explaining calories and nutrients?

CHILDREN AND OBESITY

What are the origins and causes of obesity in children, and what is its incidence? What are the physical and emotional ramifications of early obesity, and what predictions can be made for adult life? How does food advertising contribute to obesity? Would a nutrition graphic help a child understand how calorie/nutrient imbalance can lead to obesity?

The Council on Children, Media and Merchandising has reviewed the entire oral testimony, over 8,000 pages, from the food advertising hearings, plus supportive written materials. Using the issues outlined above as a guide, we have compiled relevant portions of the

testimony, with particular attention to children's reception and processing of television food commercials. We have included witnesses' remarks which bear on the issue of making television a more educational medium in matters pertaining to food selection. We have also included the views of those opposed to changing present day food advertising practices, to establish the nature of the arguments concerning television and children's responses.

This document is intended for those already interested in children and television. For further indepth treatment of these issues, the reader is urged to consult the written submissions of the witnesses and related documents supporting them. Witnesses' addresses are listed in Identification of Participants.

IDENTIFICATION OF PARTICIPANTS*

William D. Dixon, Esq., Presiding Official

CROSS-EXAMINERS

Choate, Robert B., Chairman, Council on Children, Media and Merchandising, 1346 Conn. Ave. NW, Washington, D.C.

Donegan, Thomas, Jr., Esq., Federal Trade Commission

Erickson, Ronald P., Esq., Council on Children, Media and Merchandising, 1346 Conn. Ave. NW, Washington, D.C.

Fox, Brenda, Esq., National Association of Broadcasters, 1771 North St. NW, Washington, D.C.

Hyman, Paul M., Esq., Grocery Manufacturers of America (group 1), 1775 K St. NW, Washington, D.C.

Kushner, Gary J., Esq., Staff Counsel, Scientific Affairs, Grocery Manufacturers of America, 1425 K St. NW, Washington, D.C.

Laufer, Jacob, Esq., Bass, Ullman & Lustigman, on behalf of National Nutritional Foods Association (group 5), 747 Third Ave., New York, NY

Sloat, Jonathan, Esq., Grocery Manufacturers of America (group 1), 1775 K St. NW, Washington, D.C.

Turner, James, Esq., Consumer Action, Inc., 1625 I St. NW, Washington, D.C.

Van Brunt, William, Esq., Hershey Foods Corp., 100 Pine St., Harrisburg, PA

Weil, Gilbert, Esq., Assoc. of National Advertisers, 60 East 42nd St., New York, NY

*Only those participants whose testimony and cross-examination were extracted from the hearings are identified here; for a complete list of participants, contact the Federal Trade Commission.

WITNESSES

Alfano, Michael C., D.M.D., Ph.D.	Chairman, Graduate Oral Biology School of Dentistry Fairleigh Dickinson Univ. Hackensack, NJ
Atkin, Charles K., Ph.D.	Associate Professor Dept. of Communication Michigan State Univ. East Lansing, MI
Ball, Samuel, Ph.D.	Educational Testing Service Princeton, NJ
Bierman, Edwin L., M.D.	Head, Division of Metabolism, Endocrinology & Gerontology Univ. of Washington School of Medicine Seattle, WA
Briggs, George M., Ph.D.	Professor of Nutrition University of California Berkeley, CA
Bryan, George T., M.D.	Office of the Dean of Medicine Univ. of Texas Medical Branch Galveston, TX
Burch, Maxine M.	Nutritionist School of Medicine, Dept. of Obstetrics and Gynecology Creighton Univ. Omaha, NB
Carlos, James P., D.D.S.	Assoc. Director for National Caries Program Nat'l. Institute of Dental Research Bethesda, MD
Castelli, William P., M.D.	Director of Laboratories Nat'l. Institutes of Health Nat'l. Heart Institute Heart Disease Epidemology Study Framingham, MA
Charren, Peggy	President, Action for Children's Television 46 Austin Street Newtonville, MA

Choate, Robert B.	President, Council on Children, Media and Merchandising 1346 Conn. Ave. NW Washington, D.C.
Christakis, George, M.D.	Univ. of Miami School of Medicine Miami, FL
Connor, Sonja, M.S.	Univ. of Oregon Medical School Portland, OR
De Paola, Dominick, D.D.S., Ph.D.	Depts. of Community Dentistry and Biochemistry Medical College of Virginia Virginia Commonwealth Univ. Richmond, VA
Donohue, Thomas R., Ph.D.	Chairman, Dept. of Communication Univ. of Hartford West Hartford, CT
Erickson, Barbara	7373 Willow Lake Way Sacramento, CA
Farquhar, John W., M.D.	Director, Stanford Heart Disease Prevention Program Stanford Univ. Medical Ctr. Stanford, CA
Galst, Joann Paley, Ph.D.	Dept. of Psychology Fairleigh Dickinson Univ. Teaneck, NJ
Gotto, Antonio M. Jr. M.D.	Division of Atherosclerosis & Lipoprotein Research The Methodist Hospital 6516 Bertner Blvd. Houston, TX
Guthrie, Helen, Ph.D.	College of Human Development Pennsylvania State Univ. State College, PA
Harper, Paul C. Jr. Chairman	909 3rd Avenue Needham, Harper & Steers, Inc. New York, NY
Harrison, Gail, Ph.D.	Lecturer, Dept. of Family & Community Medicine College of Medicine Univ. of Arizona Tucson, AZ
Hegsted, D. Mark, Ph.D.	School of Public Health Harvard Univ. Boston, MA

Hoffer, Douglas R.	Director of Marketing Research and Development Florida Citrus Commission Lakeland, FL
Jordan, Henry A., M.D.	Behavior Weight Control Program Univ. of Pennsylvania Philadelphia, PA
Latham, Michael C., M.D.	Division of Nutritional Sciences Cornell University Ithaca, NY
Levine, Rachmiel, M.D.	Executive Medical Director City of Hope Medical Ctr. Duarte, CA
Mann, George, M.D.	Dept. of Biochemistry Vanderbilt School of Medicine Vanderbilt Univ. Nashville, TN
Margolius, Sidney	74 Davis Road Port Washington, NY
McClure, Barney	Botsford Ketchum, 55 Union St. San Francisco, CA
Miller, Sanford A. Ph.D.	Professor of Nutrition & Biochemistry MIT Cambridge, MA
Nelson, Mary Ruth	136 Purdue Ave. Kensington, CA
Nizel, Abraham E., D.M.D.	Professor, Dept. of Oral Health Service School of Dental Medicine Tufts Univ. Boston, MA
O'Bryan, Kenneth George, Ph.D.	Director, Office of Project Research The Ontario Educational Communications Authority P.O. Box 200, Station Q Toronto, Ontario
Owen, George M., M.D.	Professor of Pediatrics Director, Clinical Nutrition Program School of Medicine Univ. of New Mexico Albuquerque, NM

Phillips, Margaret C.	Assoc. Editor Journal of Nutrition Education Berkeley, CA
Podell, Richard N., M.D.	Overlook Family Practice Associates Summit, NJ
Pomeroy, Ruth Fairchild	Women's Service Editor Redbook Magazine New York NY
Shank, Robert Ely, M.D.	Danforth Professor Head, Dept. of Preventive Medicine Washington Univ. School of Medicine St. Louis, MO
Sidles, Sheila	Iowa Consumers League Corydon, IA
Stamler, Jeremiah, M.D.	Chairman, Dept. of Community Health and Preventive Medicine Northwestern Univ. Medical School Chicago, IL
Stunkard, Albert J., M.D.	Institute of Neurological Sciences Univ. of Pennsylvania Philadelphia, PA
Tepperman, Jay, M.D.	Professor of Experimental Medicine College of Medicine State Univ. of New York Syracuse, NY
Van Itallie, Theodore, M.D.	Director of Medicine St. Luke's Hospital Center New York, NY
Ward, Scott, Ph.D.	Graduate School of Business Admin. Harvard University Boston, MA
Wissler, Robert W., Ph.D., M.D.	The Donald N. Pritzker Professor of Pathology, and Director of the Specialized Ctr. of Research in Atherosclerosis Univ. of Chicago Chicago, IL

EDIBLE TV:

YOUR CHILD AND FOOD COMMERCIALS

[A]pproximately 40 million children under 12 are affected by television advertising of foods and beverages. A typical television watching child is potentially exposed to between 8,500 and 13,000 such commercials each year.

Choate, 12/6/76, 5838

Children's television is heavily supported by food advertising. Approximately $400 million was spent in 1975 on television advertising to children alone, and over 50 percent of the commercials on programs directed to young viewers were for food products.

Charren, 1/6/77, 7739

Q. Could you explain why an advertiser might advertise heavily to children?

A. In order to get them to buy or persuade their parents to buy a product.

Harper by Erickson, 12/13/76, 6725

Q. You say...that the role of food advertising is to establish a set of preliminary values in the shopper's mind. Earlier you indicated that [it] is often targeted to a children's audience -- is it your purpose then to establish preliminary values in the child's mind when the child may be the recipient of that food ad?

A. I am sure the same thing would hold true.

Q. And the same thing with the latter part of that paragraph...the child then is being prepared to go to the marketplace and have a predisposition for the purchase of the advertised product?

A. Yes.

Harper by Erickson, 12/13/76, 6733

[C]hildren do learn from commercials on television, and I might add perhaps especially from commercial-type presentations on television.

The reasons for that are fairly obvious, I think. One is that television commercials generally are well produced. They have more work put into them than a program as a whole in terms of per second of time that they are on the air. They are shortened and children's attention spans, therefore, are not taxed and they are specifically made to hold attention.

Ball, 11/19/76, 4575-6

[I]n recent years the overwhelming weight of research evidence has suggested that television has begun to challenge print itself as a medium of comparative behavioral change.

O'Bryan, 11/15/76, 3275

[P]erhaps the most successful educational program, "Sesame Street," is based frankly on the assumption that a television-type commercial is the best way to cleanly, effectively, directly and with long-term resistance to erosion teach a specific and applied message....[A] TV commercial is the best method currently devised of mass implantation of an idea or a belief or short sequence behavior pattern and it is increasingly employed in children's educational programs such as the one where we developed "Readalong," "Sesame Street" and "French Show" to "sell" skills, attitudes and, in some instances, values....The point I am trying to make is that the TV commercial is a parsimonious, direct and influential 30 seconds of high-powered instruction, any part of which can be expected to be learned and recalled effectively and in a long-term sense by both children and adults.

O'Bryan, 11/15/76, 3276-7, 3283

Q. Do I gather from your testimony that a product advertised on television has credibility with certain populations merely because it is on television?

A. No question....There is a concept we call status referral. It is the ability of television to make whatever appears on television have an aura of some sort of status or significance, and it is certainly true with products advertised on television....[M]any of our children when asked, "Are products advertised on TV better than those found elsewhere?"...a lot of them said yes.

Q. ...[I]n effect [a] 60 to 40 [ratio] voted that because it had been on television it was a good product to buy?

A. Clearly.

Donohue by Choate, 11/15/76, 3368.

We found without any reasonable doubt that the critical factor in learning a message from a television presentation was the degree to which that message was presented to the child in a substantially uncluttered way.

If we want to make sure that a program teaches what we are looking to do, we want to concentrate all of our visual and audio material, including the nature and structure of the set in which it is presented, directly towards the message which we want them to get. An advertisement then which is promoting any product, food or otherwise,

is less likely to be dependent on the characteristics of that food itself than its dependence upon, as an advertisement, tracking and directing the attention and concentration of the viewer onto the specific selling properties of the food or product.

O'Bryan by Van Brunt, 11/15/76, 3368

I think it ought to be said too that the more the repetition the better the learning....[I]n the planning phase for Sesame Street it was clear...that one technique to be used was the commercial technique....to use such things as "This show was brought to you by the letter W," and so on. [The planners] also used inserts for alphabet bits and bits on numbers, also for relational terms and complex things.

One of the questions they asked was not should there be repetition but how much should it be spaced or massed repetition, meaning do you put it on the one show or space it across the week....The decision was to have a degree of repetition in each show, to bring back that particular commercial subsequently during the week but less frequently and then to put it in only as an occasional filler thereafter.

Ball, 11/19/76, 4576-7, 4586-7

Q. When does heavy repetition of a message such as you find in a food commercial lead to the term I believe that you use, "over-learning?"

A. ...."Over-learning" is a technical term....You learn beyond what seems to be necessary in the terms of learning. You keep on learning because that initial learning is, in a sense, forced in somehow or other.

We don't know the psychological details, but it doesn't get forgotten as easily and may be recalled a lot longer than many other things.

Ball by Choate, 11/19/76, 4587-8

Recall of information and pretest, post-test studies is higher for the commercials in a program than for the content of the program itself....The results showed that the content of the programs was not remembered well, and there were a variety of programs from commercial television as well as from our own offerings, so it was not because our programs were necessarily dull and boring....What happened was that the children responded to the content of the ad much more consistently and accurately by a factor of 2 to 1 of the content of the program. The program deteriorated rapidly in its recall potential, whereas the ad remained stable.

O'Bryan, 11/15/76, 3278, 3328, 3366

Q. Food ads, Dr. Atkin, to children are highly repetitive. How does the impact of this repetition vary with

the older and younger children, or let's say between brighter and less bright children?

A. In terms of the impact on their knowledge levels, more repetition is needed to convey a message to younger children and to those who are less bright. We find that children who are say over the age of 10 or who are highly intelligent can acquire a given piece of information after a limited number of exposures, whereas those who are quite young might need 20, 30 exposures before the information is acquired.

However, in most advertising messages, you are talking about 500 or 1,000 exposures. So over a time, I don't think there is that much of a differential. Everybody acquires it sooner or later, and the message gets around later.

Atkin by Choate, 9/17/76, 2626-7

There is little distinction between children over nine's viewing habits and those of adults according to our survey.

The advertisements which are carried on those programs are advertisements aimed at adults and are watched by children with largely the same effects, 9 years onwards.... The fact is that children over nine watch adult programs much more than they watch children's programs.

O'Bryan, 11/15/76, 3309

For children under six the character [around which an ad centers] would not be questioned at all and would be in fact an imitative model of some power. Bandura and Walters have fairly substantial research supporting this type of role model implementation....The child over six is beginning to question the validity of his sense inputs and tending to conceptualize the message more, and would not be necessarily so completely the recipient of the direct visual message.

The adolescent would operate in much the same way as the adult intellectually but would bring less experience to the presentation.

O'Bryan, 11/15/76, 3310

Available evidence indicates that children, particularly those of preschool age, have considerable difficulty separating commercial messages from program content on television. By the age of ten or eleven years, children are able to distinguish the two and yet the child of low socio-economic status will accept commercial messages more readily (20-30 percent) than will the more affluent child.

Harrison (read by Van Brunt), 10/14/76, 3228

[Piaget] talks about children developing intelligence and that is qualitatively different at different stages in the child's life.

So between the ages of four to six, the child...would be likely to accept the visual sense material without

critical judgment of the type employed by an adult, so that the child is largely a prisoner of the visual input, directed by the visual input, and will not make cause and effect relationships directed by conceptual level of understanding the product.

O'Bryan, 11/15/76, 3297-8

The extent to which a parent is available to the child, is there or is working or is not there, is the extent to which there will be parental impact[on the child's understanding of motive], and the research shows overwhelmingly that when other environmental factors, including peers, parents, siblings, have a lesser role, then television plays a greater role.

Donohue, 11/15/76, 3503-6

[W]e find that there is a tendency to accept at face value the material contained in the commercial but to be critical and comparatively judgmental about the information contained in the programming itself.

O'Bryan, 11/15/76, 3279

Q. Dr. Atkin, when siblings watch television commercials together, say....11, 8, 5 year olds, what type of communication takes place between them when there is nutrient information in an ad?

A. I have no idea that there is that form of communication. We did not measure it specifically. However, in my judgment there would be a very mild tendency, I think, for the older child to interpret the information for the younger child, and probably stimulate greater learning. There is a great number of parallel research studies that would suggest that.

Atkin by Choate, 9/17/76, 2632

Q. Doctor Ball, have you made any studies of the role of siblings as children watch an educational message over television?

A. I have done little work, not a lot....

Q. If a message is at an intellectual level above that which, let's say a five-year old child can readily absorb, and there is a seven or eight-year old child in the room, is it typical that the seven or eight-year old will deride the younger child for not knowing what the message is about, or will the older child help the younger child learn?

A. In my family, it is typical for them to deride the younger child, but I am not sure that is typical....I am sure both of those things must go on and both [consciously and unconsciously].

Ball by Choate, 11/19/76, 4583-4

If I were in advertising, which I am not, I would never make a commercial of 60 seconds in length in terms of recall. Now it may well sell the product better. That I am not familiar with. But in terms of the remembrance of the content of the material, the 15 second program for adults was, in our instances, easily the most successful.

O'Bryan, 11/15/76, 3331

The content was remembered best when the advertisement was a 15-second advertisement for adults, best for children with a 30-second advertisement.

O'Bryan, 11/15/76, 3328

Q. Do you believe that an advertisement on television successfully can contain more than one message?

A. Yes, I think there can be several different sets of information presented and processed by a child. An illustration of this is the typical cereal commercial where half the ad is devoted to the product and half the ad is devoted to the premium. Both of those factors are learned by the audience. And I think 3, 4, even 5 sets of information are possible to be learned if effective presentation techniques are used.

Atkin by Choate, 9/17/76, 2617

Q. Has there been any general or can you cite a general number of messages....that your research has to date shown that children can understand in a given commercial? Now, in discussing the number of messages, we are talking here about the food ads specifically rather than other types of ads. And I would like to limit it to that because I think that the issues involved in food ads are likely to be more complex than issues that [are] involved in other ads, so that the messages probably might be more difficult to convey.

A. Well, I think we have done some experiments where we have measured that the children learn three separate messages of information from a given ad. And certainly, that would be a minimum number of [discrete] pieces of information.

Q. What kinds of three separate information? Can you give examples of the three that would be typical of the learning process?

A. For instance, they would learn information about premiums that would be involved in a cereal. They would learn about whatever the character was that it was promoting the cereal, and they would learn whether or not the cereal was high in vitamin content. Those would be the three separate facets that would be acquired in a thirty-second message.

Atkin by Fox, 9/17/76, 2643

Q. Would you describe the difference between the preliterate child, the just literate child and the literate as your eye movement studies show how words are read on the screen?

A. The preliterate child looks at the movement of a word if it moves. He doesn't read it because he can't. He may make an attack on the initial letter but it is clear from the eye movement study that no reading is taking place.

The just literate child who hasn't developed an avoidance pattern will examine the word and in some instances read it because he can develop the information and will try and link it to whatever visual factor is present on the screen.

The literate child will look at the words always first ....They are most potent because we have learned the information retrieval system is from print. The producer nearly always sets it up so you would read it as well.

Q. Does the positioning of the word on the tube have any bearing on how much it is read?

A. To a large extent for the preliterate child it is a critical factor. For the child who has a learning difficulty or perhaps is reading at the Grade 2 level but [is] maybe in Grade 5, it is an essential criterion to position a word properly. Otherwise the kid will avoid it. For the adult it is less critical.

O'Bryan by Choate 11/15/76, 3311-2

Q. If a disclaimer or other type of descriptive phraseology were written on the screen and the advertiser or sponsor did not want the child to pick up the message, can you describe the types of cues that would lead a child away from that disclaimer?

A. The bottom line quadrant. Bring action from the top left-hand quadrant. Move the action across the top of the screen and back to the bottom left-hand quadrant. Virtually no one will look at the message.

O'Bryan by Choate, 11/15/76, 3313

Q. Do you know if -- I am not sure what the correct term is for "batteries not included" or one of those sort of caveat messages somewhere in a commercial on television -- Do you know of some of these advisory messages which do mean something to children, and do you know of others that are not comprehended by children?

A. I think for the most part these disclosures when they are very briefly presented probably have little impact, especially if it is only video, which many of them are with superimposed "batteries not included." So that kind of message has very little impact, and only among the older children. If both audio and visual techniques are used, the impact of those types are much greater, especially if a video and audio are coordinated.

Q. Can one then expand that answer to say that if one wants to put a cautionary or advisory message on the tube to a child, it has got to be designed for a child?

A. Very carefully. I think it is important that you study how children learn from television, that you pre-test the message with groups of children, and that you assess how effective the message is after it is on the air. There is a constant need to obtain feedback from the audience because the type of people who design these messages are adults, and really don't have the ability to judge exactly how a child will respond.

Atkin by Choate, 9/17/76, 2617-8

Q. I believe you said that the disclaimer is not effective with children?

A. Not unequivocally, but our research indicated when asked to describe those patent ads that have disclaimers at the end "use only as directed," by and large the message went undetected by children.

Donohue by Fox, 11/15/76, 3508

Q. On page 7 you indicate that to overload commercials with data can destroy any communications effect. Why do you feel so strongly about that....?

A. What we find is that with the addition of each additional sales point, the impact and memorability of the commercial tends to be reduced, and this has been shown time and again in tests that we have done where we have run commercials for the same product with one, two or three sales points and the margins of effectiveness can run anywhere from 70 percent down to 35. That is the order of magnitude of difference in effectiveness when you begin adding secondary and tertiary sales points.

Harper by Erickson, 12/13/76, 6732-3

It seems to me that the first element that has to be built into an effective commercial is attention getting. You have got to get the attention of the person. So whether it is some kind of colorful technique or noise or what, there has to be that there. There has to be too something that holds the attention, whether an underlying rhythmic theme or something.

And third, simply from knowledge of educational psychology, the message ought to be as simply put as possible. It shouldn't exert the viewer too much....

Q. On the point of having the message simply put, do you feel it is more effective...for an ad to have a single message or simple theme...and that...it is less effective if the ad has a number of things it is trying to convey at the same time?

A. I learned a long time ago to ask the question "More effective for what purpose?" If the purpose is a single-minded purpose, then I suppose a single-minded theme is in general the best way of going about it.

If it is slightly more complex...it might require a more complex advertisement to get it across...more effectively.

Ball by Sloat, 11/19/76, 4598-9

Q. Do you find it is important to test an actual advertisement on the child to determine their reaction to the ad?

A. Specifically it is possible from the weight of opinion from psychology as a science to predict the reactions of children to varying types of learning presentations, including associated learning, stimulus response upon learning, and guessing. Much of what can be written about children's reactions to advertisements can be based upon this substantial body of evidence in the field and learning principles generally....It is not necessary to test every single commercial to determine the exact amount of information derived from it. Most of the commercials themselves are formed on the basis of what is in fact a real time, real life research procedure conditioned largely by the sales of the product and the successfulness of a particular genre of that. Consequently those ads currently developed very often reflect the experience of the industry and the market research of the industry.

Our own research has been to directly test each advertisement's impact upon the kids. I don't believe it is necessary to do that with every single advertisement presented.

O'Bryan by Van Brunt, 11/15/76, 3362-3

Q. Would part of your suggestion then rather than recommendation be that you would test to ascertain whether confusion arises if you have too many messages such as calories, such as an energy-calorie related statement, such as more calories is not necessarily better plus the advertisers' own messages trying to get across all in a 30-second ad?

A. Confusion may be a little strong again, but I think it is possible it may get to the point where you are trying to say too much in 30 seconds.

Ball by Sloat, 11/19/76, 4603-4

I would argue then there is a great deal of need for what I call formative work before making final decisions.... And I would argue that by doing that kind of formative work you can increase the efficiency with which you get the message across and reduce the misperceptions of that message. I think that that kind of expertise ought to be put at the disposal of the FTC for that matter in helping them make their decisions with respect to the kinds of things that should or should not be placed in terms of disclosures in front of children.

...[T]he literal truth is not necessarily enough when you are dealing with children. You have to ask related questions, like do they understand what is being meant by the adult's use of a true statement? Is it being misinterpreted? Does it overcome past erroneous concepts, and I think if we can answer the questions satisfactorily we have been able to translate our good intentions into effective needs. The use judiciously of research and evaluation will help in that process, I think.

....[T]here is a need to find out in detail how much knowledge children currently have, what misperceptions they have if they have misperceptions, and with that knowledge obtained we have a little better idea of what kinds of corrective actions, if necessary, ought to be taken, what kinds of things the FTC ought to be promoting in the future in terms of its regulations.

Ball, 11/19/76, 4578-9

The way in which you can construct a voice or a sound over in any television program can direct your attention in an atmospheric way and consequently affect your attitude towards what you are seeing.

As an illustration, if you were to play bright joyful dance music in the murder scene in "Psycho," the terror component of the action would be substantially less than the sound effect that was created therein.

My point is that the relationship of voice to visual on a mix, that is, sound effect mix to visual, is a major factor in determining the way in which the material will be approached by the viewer.

O'Bryan, 11/15/76, 3383

We found that the children are particularly responsive to the cuing effects of the producer. A cue can be defined in perhaps three ways. There is a human cue in which a live actor directs attention to a saliency; there is an electronic or animated cue in which we can use something like a computer....Then there is the direct invitation cue in which you specifically ask the viewer to look at your particular product....

You can certainly center the attention of the person more effectively by appropriate placement, but nearly always--in fact always -- whenever a word which has salience to the action appears on the screen, it will be read by a reader regardless of its position. If you want the person to read it quicker and arrive at it in the shortest possible time, put it in the upper left-hand quadrant and you will find the quickest reaction to it.

O'Bryan, 11/15/76, 3282, 3312

Q. Do I gather that it is possible to study and research cuing so that one can learn how to look for it and to judge its weight in an advertisement?

A. Not only is it possible, it has been done. I have at least six reports to the Children's Television Workshop on the topic of eye movements, and this has resulted in very substantial changes to the format and structure of the "Electric Company" program for slow readers.

O'Bryan by Choate, 11/15/76, 3314

Q. What is the impact on children of seeing children in food commercials?

A. If the children are older, they will tend to imitate the behavior pattern. Children of the same age group, it is hard to say. Children that are younger do not influence an older child at all....Model identification is most heavily used among children, with adult hero figures in older children.

O'Bryan by Choate, 11/15/76, 3315-6, 3289

In all that I have been saying this morning I am inviting -- I am beseeching the Federal Trade Commission and those who operate private regulatory codes to realize that a child's perception of a television commercial, polished and sophisticated as it is, can be quite different from that of an adult, and hence in the regulatory world it is going to be that much more difficult to phrase the prohibition so that it works with a child. But with research, I think it can be done.

Choate, 12/6/76, 5886-7

I believe that as agencies such as the Federal Trade Commission awaken to the fact that commercial transactions now regularly take place between sophisticated 48-58 year-old Madison Avenue executives and eight-year-old children, this agency and hopefully advertisers will have to turn more and more to behavioral research to pin down at what time an advertiser asked to prepare a message which can be easily understood by the casual observer will more often than not convey accurate information to that casual observer even if it is an imprudent child.

I am really calling for a great deal of behavioral research on the part of advertisers and sponsors as well as the regulators before one proffers an advertisement to the general public and before this agency cracks down on an

advertiser for having phrased an ad in a certain manner. And I do believe that it is high time that behavioral research showed this agency as well as the people that you represent how advertisements can be observed and comprehended by children.

Choate, 12/6/76, 5892-3

* * * * * * * * * * * * *

At the Federal Trade Commission's Food/Nutrition Rule Making Hearing, witnesses gave evidence of the sophistication with which experts analyze how children receive television messages. We now narrow that focus to the impact of food and beverage commercials seen by children. The FTC rule making concentrated in part upon those products which made energy claims without identifying caloric values. Thus the following comments bear primarily on how children are affected by present day food commercials and might be more educationally affected were the patterns of advertising to change.

* * * * * * * * * * * * *

There is no doubt that children respond strongly to commercials directed towards their particular interest areas and this is especially apparent in advertising in the food and toy content areas. Commercials dealing with foods we have studied closely... combine the psychological phenomena of behavior modeling, attention direction, role identification and subtleties of need/want psychology to create in the child a direct learning experience, the nature of which is a conceived demand for the product in question.... [T]he TV commercial might not only take advantage of what the child is going to want to see, but may also actually modify the way he or she extracts information from the audio-visual displays. The child particularly is vulnerable to such manipulatory message production.

O'Bryan, 11/15/76, 3279, 3285

Obviously, you can present information in ways that are in a sense emotionally intriguing, enhancing to the message itself, and it is certainly true that this can be done with children as well as with adults. You can so clothe a message that the message takes on increased desirability, if you like. I think that is part of the art form that is involved here.

Ball, 11/19/76, 4582

The young child in my experience is vulnerable to television advertising because of the amount of exposure (in other words, time spent watching TV) and inability, especially for the young child, to critically evaluate the message due to immaturity and lack of experience and the child's potential for influencing the family food supply.

Therefore, it is imperative that advertisements directed at children not be allowed to mislead in any way. Information must not only be technically truthful; it must be clear.

Harrison, 10/14/76, 3215-6

Q. Do you sense in your experience with advertising for food products any distinction that you might draw between food advertising that would be reaching children and those that would not?

A. Absolutely. It is a whole subject by itself and I am sure that there will be many speaking to this. A child is particularly vulnerable and they believe about everything they see or hear.

Briggs by Turner, 7/12/76, 67

Q. Do you think that, from your experience, that the situation represented by children under the age of five, poses a particular and separate and unique problem in the advertising area from the advertising to the general public?

A. I think, the child, in a sense, especially with certain snack foods may be terribly susceptible to certain food advertising and if one looks at Saturday morning cartoons over 50 percent, I believe, of the advertising in those particular programs is oriented to food and food to the child.

Jordan by Turner, 7/13/76, 222-3

With regard to advertising especially directed to children, I think many of us are concerned that children, the habits that children form during childhood, do get carried on into adulthood, so I think we need to be particularly concerned about beginning or establishing food practices in childhood that are going to be carried on into adulthood.

We need to be concerned also...that already, if they are keeping a diet that is high in saturated fats and high in cholesterol, this is already laying down potential harm for them 20 or 30 years down the pike, so I think we do need to be very concerned about food advertising to children just as we do food advertising to adults.

Latham, 11/15/76, 3424

Q. You indicated the advertising industry has learned how to be very effective in manipulating its audience. Do you have any feelings about their effectiveness as regards children?

A. Yes. Children have been the most exploited group of consumers by the food industry in general, particularly in relation to cereals. It is a commentary that before World War II the cereal industry introduced presweetened cereals and the housewives of that day rejected presweetened cereals. They never got a foothold in the market. But in recent years they have become the largest selling type of cereal, and I attribute this largely to the development of television as a very powerful selling medium for children, and I think if we had television before World War II the housewives would not have been able to reject it....I might add that the same kind of manipulation of children exists in other foods of high cost and low nutritional value, such as diluted fruit drinks which are usually 90 percent water and sugar, and also some of the children's vitamin products, and other low nutrition beverages. The same manipulation of the child audience largely through television exists, and also with candies of various kinds.

Margolius by Erickson, 11/18/76, 4258-9

Q. Do you believe that food advertising has an impact on the habits, nutritional habits or nutritional beliefs, of those under 13 years of age?

A. Yes, I do....I think that young children often are persuaded that they want foods for the wrong reasons.

Pomeroy by Choate, 1/6/77, 7695

Q. What is it that you have in mind when you talk about misinformation and half truths in food advertising... ?

A. [I]n general [the ads] deal with the need for certain nutrients which in addition to a regular diet... are questionable, or misinformation about the role of certain food products, such as breakfast cereals or sugar or soft drinks...

Q. Can you tell me for example, have you seen any of these half truths in food advertising that would utilize the term "energy?"

A. Yes, I have....I have seen case after case of advertisements which imply that just eating a certain food will

provide good energy for children when there is no information about the type of energy source that that energy is coming from, and to me that is a half truth.

Briggs by Hyman, 7/12/76, 107-8

Q. Do you have any research to substantiate a speculation that these advertisements... have conveyed to adult consumers a message that they can eat the foods... in these advertisements and derive the energy from them without getting calories?

A. ...[T]he entire weight of the associative psychology ... the relationship between presentation and stimulus and its acceptability by the viewer would lead me to give a considered opinion that this ad is founded on the premise that....natural sugars in orange juice would in fact produce energy in adults, and that is the message that the ad is intending to give to the adult....[H]e could not on the basis of this ad know that energy was in fact caloric content.

O'Bryan by Weil, 11/15/76, 3344-5

There is ample reason to believe that food advertising and television advertising in particular is a force in affecting what children eat....[P]resent advertising practices may actually promote the consumption of high caloric density food by children including those at risk of obesity ....[T]elevision advertising of food products does affect what children buy and what their parents buy and, thus, what children eat.

Harrison, 10/14/76, 3211, 3203-4

From what I have read from my knowledge of the huge amount of money that is spent on childhood advertising, I personally have no doubts that food advertising has had a major impact on what children are consuming in this country, and the foods have been especially prepared to make them attractive to children, often without nutritional considerations ....I cannot believe that the food industry would bombard children with those messages every Saturday morning and every morning of the week and spend such huge amounts of money if they did not think this advertising was influencing the eating habits of American children.

Latham, 11/15/76, 3466-7

Q. Dr. Tepperman, do you believe that children respond to energy claims?

A. I do, and I think that some of the energy claims that are made in children's advertising are very clearly in my view in the category of magic because I have occasionally... watched the Saturday morning ghetto cartoon things and a lot it seems to me... is in the category of attributing extraordinary properties to food....

Q. ...[D]o you then think that energy oriented food ads lead children to a greater consumption of foods?

A. I would guess that it did, yes.

Tepperman by Choate, 9/13/76, 1642-3

Q. And then I suppose that another factor entering into the eating habits of an individual would be his personal taste and other preferences for given foods; is that correct?

A. That would be correct. Could I add, however, that personal taste and preference is determined by itself from the environment in which that person is found. One of the significant factors of that environment will be the television commercial and television programming. They are not divorced or independent.

Q. I don't think you mean though, Dr. O'Bryan, do you, that if a person as a result of viewing a television commercial eats a certain food and doesn't like the taste of it that he is going to continue eating it?

A. No, sir. I would suggest that why the person eats the food, and the prime reason for most advertising agencies as I understand the profession, is to get the viewer to try the food, and the effectiveness of the television program is measured in initial sales.

Q. But after the first trial, from then on repeat purchases or repeat consumptions would depend upon the reaction and preferences of the consumer himself?

A. Not entirely, because if the advertisement continues and has substantial other desirable attributes beyond the taste of the food, the purchaser may well continue to use it.

O'Bryan by Weil, 11/15/76, 3324-5

Q. [Y]our statement is that when children were asked how they knew which products they ought to buy when shopping, one-third responded, the products they saw on TV....If, in fact, a child had a negative attitude toward a food product, do you think because the child saw that product on television they would wish to purchase that product....? If my child doesn't like broccoli and broccoli is advertised on television, do you think the ad is going to favorably dispose my child to eating broccoli?

A. It could.

Q. Do you think that is likely?

A. It depends on how much he hates broccoli. If he doesn't hate it a lot, it could dispose him fairly quickly. That is what mass media and television advertising is all about.

Donohue by Van Brunt, 11/15/76, 3531

These commercials directed to children carry implicit nutritional messages which affect the child's eating habits and preferences. These efforts by advertisers to sell food products to children are most effective. In 1971 a study prepared by Scott Ward, of the Harvard Graduate School of Business Administration....found that the vast majority of mothers yielded to their children's [food purchase] requests. Within the five to seven year old group the following are the percentages of mothers yielding to such request[s]: Breakfast cereals, 88 percent; snack foods, 52 percent; candy, 40 percent; soft drinks, 38 percent.

Within the age group of eight to ten year olds 91 percent of the mothers were yielding to the child's influence regarding cereal purchases. These studies demonstrate that: one, the child develops purchase preferences as a result of television commercials; two, these purchases are expressed to adults and affect the adults' purchase; and three, by responding to television commercials in this manner the child acts as a consumer albeit one who utilizes his/her parents' purchasing power.

Charren, 1/6/77, 7739-40

I think one of the problems is that advertising, which is child-directed, could be educationally relevant information, but, in fact -- of course, it doesn't impinge upon the individual who ultimately has to have the decision-making capability. What I see as a major problem in the advertising to a greater or lesser extent is that it is impinging on the younger child, is prompting that child not to make any kind of an intelligent decision, but rather to harangue the mother or whomever the caretaker is to purchase this particular product for any of a variety of reasons, most of which are non-nutritionally related.

Owen, 10/12/76, 2875-6

Q. Well, then even if [the mother] has no time in the store [to read the package], you did say when she gets home she has the opportunity and occasion. So the most she is losing is the purchase of one package. By the time she goes back to repurchase, she would have had the opportunity to check the nutritional and caloric content, right?

A. Right, if she can stand up against the pressure of her children.

Q. Twenty-four hours a day?

A. Right, 24 hours a day.

Q. With four children, you had 96 hours a day?

A. I have been there.

Sidles by Weil, 9/14/76, 1864-5

I'd like to suggest that children now are getting fragmented information in food commercials that they are seeing on television every time they watch a child's program.

And that the fragmentary information they are getting from these messages is educating them to understanding all the wrong kinds of information about food.

Charren, 1/6/77, 7746-7

Our current problem with food advertising is that it provides a maximum of stimulus to modify purchasing patterns and a minimum of balanced, valid, unbiased nutritional information.

Bryan, 10/13/76, 3063

[A] great deal more "information" is going into children's minds now, information that they are using as a basis for selecting a food, and this "information" may be the worst possible basis upon which they should select foods in later life.

Choate, 12/6/76, 5877

In Kellogg's Cocoa Krispies it uses the term "energy." It says it gives you lots of energy. In the third frame of the story board it says this product... "gives you lots of energy, good wind." I don't think that is true. I think that is deceitful and I think the lack of caloric identification after the word energy or anywhere associated with the word energy can be nothing but misleading to the children....

Appendix I, page 5... this is a Wheaties commercial.... The fifth line of it is that Wheaties is 90 percent energy, 100 percent flavor. There is no identification of the calories. I don't believe that Wheaties is 90 percent energy. I don't understand the meaning of the term. I don't understand how a child could understand that term and hence I believe this advertisement is misleading....

On page I-13... there is again a reference to energy. This is on Kellogg's Sugar Smacks where it says it took stamina, energy and strength to be an American Indian. I think it probably still does, but there is no identification of the energy component.

Choate, 12/6/76, 5873-4, 5876

Q. Can we turn then to... the Kellogg ad about eating a good breakfast and I would like to ask you the same questions. Do you feel that children generally should eat breakfast?

Presiding Officer Dixon: Mr. Sloat --

Mr. Sloat: I am trying to ascertain the basis for the criticism.

A. ...I can give no explanation as to whether breakfast is good or bad, but the....ad suggests, that you energize at sunrise with a good breakfast, and energy is not explained. Because energy is not explained the viewer is not given that information which would enable him to know that food energy was calories. That is the only comment I make on the advertisement.

Whether or not breakfast is good or bad is judgment for the mother or father of the child himself.

O'Bryan by Sloat, 11/15/76, 3376

Q. Dr. O'Bryan, is it your testimony that any of these advertisements are misleading in your opinion?

A. They are misleading insofar as their energy claim is concerned. They do not tell the facts about food energy. They present food energy in a great many associational forms. They fail to give the necessary information that energy is caloric content....They are incomplete.

O'Bryan by Laufer, 11/15/76, 3384-5

Q. In food commercials -- I am now again speaking of the en masse impact -- in food commercials that contain no caloric... information, do children pick up attitudes towards food... which might be considered negative or counter-nutritional?

A. If food advertisements perform the same way as our educational advertisements do, there is no reason to suspect that wouldn't be the case.

O'Bryan by Choate, 11/15/76, 3315

Q. I would like to ask for clarification then of one of your statements which was offered at the outset of your testimony with regard to the recall ability of children. I believe that you stated that they have demonstrated extensive familiarity with the themes or with the product names or various other qualities. However, you stated that the recall of [nutrient] data is minimal, and I presume you are saying even where that data was included in the advertisement, the recall was minimal although the recall of other characteristics was intensive?

A. I think the only implication there is that children are learning proportional to the emphasis in the commercial. If Ronald McDonald is on for fifty seconds in a sixty second McDonald ad, they will recall more of him than they will recall any kind of nutritional mention of the hamburger, if it was given in two or three seconds....It is not that nutritional information is more difficult to get across than the other types of information, it is just that it is not being properly promoted.

Atkin by Fox, 9/17/76, 2644

The present study demonstrated that the harder a child worked to view television commercials, as compared to the program narrative, the greater the number of purchase influencing attempts he/she engaged in at the supermarket. The significance of this finding is that a behavioral measure of both children's television viewing behavior and their purchase influencing attempts, rather than reliance on mothers' reports, has determined that television commercials are related to at least one aspect of children's consumer behavior, namely their purchase influencing attempts at the supermarket. Perhaps of even greater practical significance were the findings that children do actually mediate a significant proportion of their parents' food selection at the supermarket, and that those children who watched more commercial television at home requested more items at the supermarket. Furthermore, the fact that the food product most frequently requested by the children, namely cereals, corresponds to the food product most frequently advertised in commercials directed at children...provides additional support for the hypothesis of a causal relationship between television advertisements and children's food requests and preferences.

Galst, 11/19/76, p. 5 of written testimony

One of the interesting things as we work with consumers daily is a new trend that we have seen in recent times and, that is, parents, mothers, particularly, not taking their children to the grocery store with them to shop.

Q. What is the reason for that?

A. The reason for that is because of the programming that has come into the environment and the mind of children which provides power tactics on their part when they are in the grocery store. This means the influence that has become available through a child in imposing purchasing preferences on the family dollar.

Q. You are saying they leave the children home because of the impact of the advertising on the children?

A. Yes.

Burch by Turner, 9/16/76, 2344-5

* * * * * * * * * * * * * * *

Having now established, through the testimonies of witnesses to the Federal Trade Commission that advertising observed by children has an impact on them and that food advertising has particular relevance for children, we now include comments related to the health implications for children were they to be misled by current-day food advertising.

* * * * * * * * * * * * * * *

Obesity is the most prevalent public health nutrition problem in this country. Depending on the standards used to assess obesity, between ten and 35 percent of the adult population of the United States is overweight or obese.... Obesity is much more prevalent than is undernutrition among United States children, and this is the case for the low-income segment of the population as much as it is for the more affluent segment.

Harrison, 10/14/76, 3205-6

Q. Do you know, and if you know, could you tell us something of the magnitude of the phenomenon of obesity during childhood as it occurs in this country?

A. ...[T]he figures I have seen go anywhere from 10 to 20 percent in the first or second decade of life of grossly

obese children in the United States....I know of no data from other countries showing such a frequency of overweight.... It, too -- this, if you will, epidemic of obesity in childhood, a totally new historic phenomenon and still confined to our country -- is a societal phenomenon even though each case has special features.

Stamler by Erickson, 11/22/76, 4775, 4777

Q. Yesterday we heard testimony by Dr. Stamler which indicated the prevalence of obesity at earlier ages was growing in this country. Do you concur in that judgment?

A. That wouldn't surprise me. I don't know the actual statistics of the increase, but I know that obesity is quite prevalent in the United States in children.

Van Itallie by Erickson, 11/23/76, 4838

I saw some horrendous statistics of one-year-old children in the state of Florida in a survey of thousands of children, 21 percent of these children are obese.

Christakis, 12/1/76, 5526

I am very much aware of the nutritional problems which exist in the United States today, and there is no doubt that obesity, including childhood obesity, is a problem which merits serious attention of those concerned with the nation's health....One study of 12,000 school children showed 30 percent of them more than 20 percent overweight, based on standard height-weight charts.

Guthrie, 12/3/76, 5765, 5768

I am of the opinion that genetic traits, excessive infant feeding, and too little emphasis on the need for strenuous physical activity are significant factors contributing to childhood obesity.

Guthrie, 12/3/76, 5778

Q. So the pattern of obesity may not be a biological or metabolical, it may be --

A. (Interposing) It may be set by patterns of physical activity, inactivity, and by the factor of the parents urging the children to eat, clean-up-the-plate philosophy.

Connor, Sonja by Turner, 7/19/76, 876

We have a culture that is calorie rich, and a culture that [includes] TV and automobile, so we have lifestyles that combine caloric excess relatively with sedentary living, leading to the frequency of obesity in childhood in our society today.

Stamler by Erickson, 11/22/76, 4777

[T]he origins of obesity are to be found in a variety of factors: early over-nutrition; decreased physical activity and psychological and social forces....[T]here is good evidence in the United States that social forces are the most powerful contributors to obesity.

Stunkard, 12/8/76, 6270

[O]besity... has a genetic component and environmental component. Among the environmental components are not only the ready availability of food but the way in which food is presented to people as being desirable or available.

And I think that one has to say that one of the many contributory factors to obesity is the manner of presentation of food to the public in advertising, okay?

Tepperman by Van Brunt, 9/13/76, 1650

Ads which present high calorie foods in conjunction with highly sought after social success, family warmth, peer approval and such, play heavily on the desires of many overweight people to obtain social acceptance. Although the ads rarely show a very fat person as part of the good life, the implication is strongly presented that the food (which is very likely to make the viewer fatter still) will not prevent, but potentially assist in entry into the desired social strata.

O'Bryan, 11/15/76, 3291

When children are reared in the same environment as the parents, the relationship is undoubtedly partially environment and partially hereditary. However, Mayer, in studying the effect of environment on the incidence of obesity, found that infants adopted into families with one or more obese parents did not become obese, whereas those born into similar families did become obese.

Guthrie, 12/3/76, 5775

[Y]ou find obesity an awful lot more in families where there is obesity. It runs very very strongly in families. The figure suggested... when both parents are obese, 80 percent of the children are obese. When one parent is obese 40 percent, and when [n]either parent is obese 10 percent.

Q. My question, Dr. Stunkard, was what would be the causes in your estimation of these 80 percent, 40 percent, 10 percent replications of the parents' relative obesity?

A. ...[I]n general you could say it is heredity and environment... [T]hese children... have the genes and then they are susceptible to eating practices within a family.

Nobody knows for sure what percent of the resulting obesity is due to which, but the weight of the evidence looks very much as if it is the environment and it is the eating practices.

Stunkard by Choate, 12/8/76, 6287, 6289

These studies and others have demonstrated also that obese parents are especially likely to raise obese children, and I think that's fairly obvious in looking around in any group of children, and that young children who are obese have a high probability of suffering from adult obesity.

Bryan, 10/13/76, 3059

Studies to determine the incidence of obesity in children of obese parents have shown that if both parents are obese, the chance is 73 percent that the children will be; if one parent is obese, the chances are only 9 percent the children will be.

Guthrie, 12/3/76, 5775

Q. Is it possible that not only may [the Apache and Navajo children] be shorter, but they may be naturally more heavy-set?

A. Of course, that is possible, A number of things are involved in weight-for-height. One of them is the amount of body fat. One of them is the ratio of trunk to leg, which is something that varies a great deal from one population to another, and so it's a complicated sort of matter.

Harrison by Van Brunt, 10/14/76, 3233-5

For example, the Apache children studied in 1969 were significantly shorter [for their age than accepted standards]. Thirty-eight percent were below the tenth percentile. A study of Navajo children done approximately at the same time showed also an excess of short children....

Now, the implication of this rather long story is that it may be that the genetic potential of the Apache children is simply to be shorter and that that shortness was not a reflection of undernutrition but rather of racial difference.

If that's the case, however (and I believe that it very well may be) what this means is that... the genetic potential to be a shorter adult requires fewer calories than the taller child and may be even more at risk of developing obesity.

Harrison, 10/14/76, 3233

[M]ost obese children become obese adults. Fewer than one-quarter of the children identified as fat at the pre-school age reach normal weight and stay there at any time in their lives.

Harrison, 10/14/76, 3205

[T]here have been several studies -- I think probably the best known one done at Rockefeller University -- which has shown that obesity in children, in young children, is related to obesity in older children and in adults, and has also of course been the work that has suggested that obesity in parents, particularly in mothers, is related to obesity in children.

Dr. Fomon, from Iowa, has shown that overweight babies tend to be overweight as they get older and that this is probably going to carry on into adulthood.

Latham, 11/15/76, 3465-6

[O]besity in the young predisposes very much to the retention of obesity in the adult and older age periods.... All people in adult life who are obese, if you then look back at...their weight records in pediatricians' offices and clinics, you will find that obesity correlates vast[ly] with the weight at the age of two to five years rather than with the birth weight.

Levine, 7/23/76, 1501, 1532

Q. Dr. Bryan, do you concur with statements that we've heard earlier that the chances of a person being obese as an adult are increased if they were obese as a child?

A. Yes, without doubt.

Bryan by Choate, 10/13/76, 3072

Ten percent of all the obese people in this country have a history of early childhood obesity or adolescent obesity. That is one figure you can get.

Now, ten percent of the total number of obese people in the country may sound like a small number of people to you but it is actually absolutely a very large number. If you want to calculate it out there are maybe 35 to 40 percent adults who are obese; of our adult population how many millions of people is that? Ten percent of that is going to be a fair number of millions of people, isn't it, Mr. Van Brunt?

Tepperman by Van Brunt, 9/13/76, 1649

Bakwin attributes some of the problems of obesity in adolescence to a pattern of eating in which the individual is trained to eat beyond the point where he experiences normal satiety signals, to the point where he is overeating. He believes that such a situation can be conditioned by patterns of feeding in early infancy. Some infants have been encouraged to eat as much as they want as frequently as they want....The tendency of mothers to consider large weight gains in early infancy as highly desirable and to compare the eating habits of their infants to those of other infants leads them to introduce solid foods at an early age, to feed high caloric density milks, and to encourage the child to consume large quantities of food.

Guthrie, 12/3/76, 5776

When a child is very small it's hungry....Hunger is an unpleasant situation. It is a dysphoria. When the baby is fed the unpleasant sensation of hunger goes away and this is a very normal thing for babies and it's great for the baby. The difficulty comes when children grow up and as perhaps adolescents they suffer dysphorias which are not hunger but there is a kind of confusion in the head about dysphoria and they make the false [syllogism] that "Because I eat food I alleviate the discomfort of hunger, I will also alleviate the discomfort of this other unpleasant sensation that I have," so people eat, really, inappropriately to make some sort of unpleasantness go away and this becomes a fixed pattern with a lot of people....

Now, in addition to the symbolic value of food and ritualistic use of food, food is taken for [hedonistic] purposes for pleasure, and this is something that happens very early in childhood, which I think is a sad thing. The children very early in life begin to associate the ingestion of sweet food with pleasure and sweets are given as rewards to children and at that age in childhood it is possible to develop eating habits and food habits which can become very deleterious later in life.

Tepperman, 9/13/76, 1609-10, 1603-4

If a rat is overfed during the first three weeks of life, it will become obese...as a result of the development of fat tissue that is of a special type that has more cells than normally.

The evidence in humans is not as clear cut and one of the problems is that this information has only been known for about 10 years and so it has not been possible to follow single individual people during that time.

So instead of that it has been necessary to do cross-sectional kinds of studies, and these suggest that although early nutrition is not as definitely related to later obesity as it is in animals, that in general the same kind of picture holds.

Stunkard, 12/8/76, 6277-8

Q. Are you aware of any theories about the cellular development of individuals before the age of five that might lead to obesity in later years?

A. Yes....There are theories that over-feeding, especially about the first year of life may cause an increase in [adipose] cellularity and that once these cells are there there is no way to remove them.

Jordan by Turner, 7/13/76, 222

Q. You have several comments in your statement concerning the importance of addressing the problem of obesity in the first year of life; why do you regard that as significant?

A. That's based on two lines of evidence. One is the evidence that has been developed in relationship to the times of life when cell division in the fat organ, if you include all of the major fat depots in the body as a fat organ, is likely.
That is, within the first six to nine months of life, and then again during the teenage years.

Bryan by Van Brunt, 10/13/76, 3079

I have indicated in my direct statement that there is good evidence, both in animals and man, that the increased caloric intake in childhood generates the production of more cells which can store fat which then leads to adult obesity.

Q. When you say childhood...would you be more precise what years are you talking about?

A. We are talking of the years zero to ten or twelve. Roughly from birth to puberty would be the statement.

Levine by Van Brunt, 7/23/76, 1523

Q. Could you tell us whether or not the fat cell in infants, in children...the theory, is it accepted broadly by the medical profession?

A. Broadly by the medical profession, do you mean the majority of MD's practicing in this country? No, because I don't think broadly they know about it. ..I think among people in metabolic disorders, it is quite favored.

Levine by Dixon, 7/23/76, 1531

Q. How do you feel about the role of exercise with respect to the weight problems of both adults and children?

A. I find that exercise does not always control your weight, but it does make you a healthier person.

Q. Have you read some of the studies which now indicate that the problems with child obesity to the large degree [are] influenced by the lack of activity on the part of that child rather than the over-consumption of any particular food product?

A. No, but I could imagine that this would be partially true. They are all sitting at home watching the commercials on television.

Sidles by Van Brunt, 9/14/76, 1850

Q. With respect to the childhood problem you made mention of a minute ago, are there studies which also indicate that some of the childhood obesity problems are due to lack of activity by those children?

A. That is very uncommon in children. It is much more common in adults.

Levine by Van Brunt, 7/23/76, 1524-5

In general, the obese child...is less active, and I think there is some data to demonstrate this in studies elsewhere, but in my own personal experience, the more they are excluded from the peer group activities, the less active they become, and also, the more obese they are, the more difficult it is for them to perform work, exercise, work, whatever you want to call it and, therefore, the less that they perform.

Bryan by Van Brunt, 10/13/76, 3080

It does not necessarily follow that an obese child consumes more of energy-providing nutrients than a non-obese child. In fact, it has been demonstrated that the opposite is true. Mayer, in studying the activity patterns of obese and non-obese children, found that the obese exercised significantly less than did the non-obese. Even when the

obese child reportedly participated in an activity for a comparable period of time, his actual time of...activity was as little as one-third of the non-obese child. He also found that the obese child consumed fewer calories than the non-obese.

Guthrie, 12/3/76, 5775

Q. Do you have any observations as to when the impoverished population worries about obesity in their children, at what age in the child they start to worry about obesity in the child?

A. Yes. As a general rule, it is when the child comes home crying from school and you find out why the child is crying.

Bryan by Choate, 10/13/76, 3071

[T]he child who is obese has a very difficult time [developing] normally from a social and emotional point of view.

Harrison, 10/14/76, 3206

Q. You speak on page 2 about serious social disapprovals amounting at times to discrimination against the obese. When does this start?

A. That starts quite young, and probably going to school is a particularly traumatic time for fat children, when they come up against a lot of other children, and it is very, very severe in school-age children.

Q. The discrimination?

A. The discrimination. It is more than discrimination. It is really at times among children...quite vicious.

Stunkard by Choate, 12/8/76, 6292

[O]bese persons whose overweight began in childhood are more overweight, are more difficult to treat and have more emotional difficulties, particularly in their body image disturbance which is much more frequent among people with childhood onset of obesity.

Stunkard, 12/8/76, 6310

* * * * * * * * * * * * * * *

Obesity, carrying from childhood to adulthood, may be accompanied by additional problems of nutrition and health communication. Populations of the American Southwest provide examples.

* * * * * * * * * * * * * * *

Q. Dr. Harrison, are there any particular problems on an Apache reservation due to language perhaps when a child tries to communicate with their parent about commercials?

A. Certainly. There's an interesting language situation on this particular reservation, and that has to do with the fact that labeling and advertising are in English and there are still a significant number of people in this area who are monolingual in Apache.

This does not comprise the young adult population. It comprises older adults, grandmothers especially, who very often have the responsibility for taking care of young children. It also comprises a proportion of at least the rural pre-school children, because while school on the Fort Apache Reservation is conducted in English, many parents make a conscious effort to speak Apache to their young children as the primary language, because they won't learn it otherwise because they don't get it in school.

So, there are some preschool children, especially in the more isolated communities, who do not understand English. There are many children who understand English and watch television whose grandmothers do not. So, it's a complicated linguistic situation.

It can't be remedied, by the way, by labeling and advertising, at least in the written sense in Apache, because at least until recently it has not been a written language.

Q. Dr. Harrison, in the populations which you yourself have studied, do children and (a separate question) their parents understand the relationship between good eating habits and good health?

A. ...[T]o take children first, I think while some older children do, many do not. Probably most do not. In terms of parents, my most recent experience in White River indicate[s] that many do not.

For example, I can think of two instances. One is that we saw a very high incidence among children of what is called milk bottle syndrome, which is essentially the rotting away of the front upper incisors of the baby teeth due to years of taking a bottle to bed filled with a sweet liquid

not necessarily milk but often Kool-Aid or sweetened tea or juice, which would bathe the teeth for several hours. These children are really severely handicapped in their ability to chew and in their appearance. And we found many of the mothers who had no idea of the etiology of their children's dental problem; that it had to do with the way the child had been fed.

I think in the case of obesity and overweight that there is a clearer picture on the part of most parents and also children that there's a relationship with food intake.

Q. Dr. Harrison, in the populations you've studied in the Southwest, is there any observable difference in the vigor, the physical movement in these low economic populations amongst their children on the playground, in the yard?

A. Again it's hard to generalize. The grossly obese child is not as active as the child of normal weight, and this is true in populations at any income level. The markedly undernourished child is also somewhat lethargic compared to other individuals. But, as a group...you might not discern too much. They're active children.

School nurses and teachers, however, will tell you that there is a significant number of children who have difficulty paying attention and learning, and they miss school frequently because of health and complicating nutrition problems.

Harrison by Choate, 10/14/76, 3218-21

I think it is important to comment that within both the Ten-State Survey and the preschool survey that there appears to be relatively little association between socio-economic status and the nutritional quality of the diet... The poor are buying, essentially, as nutritious a diet as, I believe, the rich, looking at the country as a whole.

Within selected groups in the Southwest...the Apache children in Arizona...and Dr. Acosta's study with the Mexican-American children in Southern California, I think that the information is somewhat different in some respects from that generated out of the larger population...It would at least suggest to me...there is some degree of nutritional vulnerability among some population groups in this country.

Owen, 10/12/76, 2809

Q. [A]re you indicating that Mexican-American populations are similar in their weight measurements to high socio-economic groups?

A. The study to which we are specifically referring here...was a reasonably good study from a standpoint of a stable population and interviewers basically indigenous to the community....[T]hose children did have energy intakes

which were equal to or perhaps slightly greater than those of a similar age population of the middle income, predominantly Anglo children, but at the same time, those children are somewhat shorter in stature than the reference population, even though their weights may be comparable.

So that one then is looking at a population which might have an energy intake which could be interpreted to some extent as a surplus.

Q. Which might be a reason for their being more often obese?

A. I believe so.

Owen by Choate, 10/12/76, 2821-2

Q. What general nutritional vulnerabilities have you observed in the southwestern population that you've studied?

A. ...I have not personally been involved in studies... with Mexican-American children in the Southwest [but] I believe that the available evidence...would indicate...that the areas of vulnerability are...caloric deprivation on the one hand, total nutritional deprivation in concert with that....[T]here is vulnerability from an economic point of view in terms of total food availability and the utilization of foods in Mexican-American children.

Q. Dr. Owen, switching away from Mexican-Americans for a second, and getting to the native Americans, does your last paragraph on page 2 indicate that native Americans are becoming obese on less calories?

A. ...Apache children, as we studied them in 1969, appeared to be equally as fat or fatter than Mexican-American children, despite somewhat lower energy intake.... [T]he preschool children today are apparently fatter than were their siblings or their associates seven years ago. They are heavier, but they are no taller.

Children who were studied seven years ago and re-examined now as pre-adolescents are of interest in that they are relatively fatter now than they were seven years ago....

Q. Dr. Owen, as a doctor, does this apparent increase in weight, based on height or skinfold thickness in that seven-year period give you any indication as to the nutritional health that these people will face ten, twenty, thirty years from now?

A. Well, I think, Mr. Choate, that the...broad experience in this country in the examination of overweight or obesity, excess fat in the adult population, would clearly indicate that a very large portion of people who are, as

young adults, obese, were in fact obese or substantially overweight as children....I think that has really quite profound implications in terms of where those individuals are going to be twenty years from now, and I don't think we can ignore the associations between obesity and later diabetes and cardiovascular disease and hypertension, as what I would identify as major associated diseases.

Q. Are there other food-related ailments or diseases of the population that you've studied in the Southwest which will also interact with their tendency towards obesity to their detriment?

A. ...Dental caries were a significant problem in the deciduous dentition, and continued to be a significant problem in the deciduous baby teeth in the population of Apache children....[T]here are significant problems in the area of dental caries amongst the older children which unquestionably have some relationship with nutrition.

Q. Dr. Owen, do you observe more advertised foods being used by the population that you've studied in the Southwest?

A. Well, from personal observations, again, relating specifically to the White Mountain Apache...would certainly indicate to me that the availability and the utilization and the consumption of carbonated and uncarbonated beverages is strikingly high....

Q. Dr. Owen, would your populations, meaning the populations that you've studied, gain from understanding the caloric worth of the food that they consume?

A. I would certainly hope so....I have little question that the Apaches would respond to appropriate educational efforts in relationship to calories, just as they have to iron and ascorbic acid, and probably to Vitamin A and to calcium which were a serious question seven to ten years ago.

Owen by Choate, 10/12/76, 2824-32

There is a great racial disparity in children's understanding of television advertising....[B]lack children are about half as able, given comparable age levels, of cognitively processing a television advertisement.

Now what that means is black children tend not to understand, or twice as many of them do not understand, what the intent or motive of a television ad is, and the motives that we outline in the testimony include the intent to sell, the concept of program sponsorship....A child who does not

believe that there is some ulterior motive in television advertising is more susceptible to the claims.

Donohue, 11/15/76, 3473

* * * * * * * * * * * * * * *

Testimony on cholesterol and atherosclerosis among children received mixed attention from witnesses during the FTC hearings.

* * * * * * * * * * * * * * *

[T]here is evidence to suggest that at a very early age, probably in early childhood, one's life habits and particularly one's eating habits [have] an effect on the laying down of arteriosclerotic material in the arteries.

Latham, 11/15/76, 3423

[T]hese factors must be addressed when individuals are young rather than waiting until individuals have reached the point where symptomatic cardiovascular disease occurs.

It is clear why this must be the case. Since half of first heart attacks are fatal, waiting until individuals have symptoms is clearly inappropriate....It takes many decades for this problem to appear, so beginning changes that would prevent atherosclerosis is something that needs to be begun when individuals are young rather than when they have reached middle age in order to have appropriate and full efficacy.

Farquhar, 11/19/76, 4408

At the present time I am recommending the use of diets low in cholesterol and saturated fats in young individuals as well as in children. I think there is little evidence for any harm from such diets, and there is a good deal of presumptive evidence that they may do good.

In my opinion, it is not misleading to infer that following such a diet from early life should lessen the chances of a premature heart attac[k].

Gotto, 10/12/76, 2745-6

[F]rom a biological point of view, it would seem that [with] a child under ten it really shouldn't matter what he eats except we know that food habits become formed and become fairly firmly entrenched during this age so that as speaking in my role as health educator, that if you are going to have people eat properly as adults in terms of cardiovascular nutrition you have to have their value systems and tastes

developed during the time they are starting to choose their own meals and that is five and six year old kids. There is no harm in restricting saturated fat in their diet.

Podell, 11/29/76, 5053

The cholesterol levels of the American children are higher than the cholesterol levels of children of comparable ages in non-Westernized civilizations.

Bierman, 10/13/76, 3012

[M]ost of us have hypercholesteremia acquired and interestingly...we acquire it not in childhood by and large. U.S. children have cholesterol levels not different from Masai children.

Mann, 11/29/76, 5151

It surely is true that all human children wherever in the world they have been examined show evidence of early stages of arteriosclerosis very early in life.

Mann, 11/29/76, 5163

I think the major issue is if we are going to change the diet of the American people we have to start when children start eating the diet. I am not persuaded that the issue is development of atherosclerosis in children. I see the data; children all over the world have about the same degree of atherosclerosis in the first several years of life anyway, so I don't think it is a matter of preventing atherosclerosis in children.

I think it is developing dietary habits that are consistent with what we are trying to do.

Hegsted, 12/7/76, 6066

You have to recognize plaques develop over a period of 30 to 40 years...the beginnings of the process are visible in 8 year olds, 9 year olds, 10 year olds....So that there [are] certainly important aspects here in terms of what one thinks about in relation to children and to advertising that will affect children and the kinds of food habits that children are forming that may be with them in their teens and their 20's and later.

Wissler, 9/15/76, 1989-90

* * * * * * * * * * * * *

A third major health problem was addressed by several witnesses in these proceedings, that is, dental caries:

* * * * * * * * * * * * *

Consumption of sugar is considered to be of primary etiologic importance in the development of dental caries, especially in children in the cavity-prone years.

DePaola, 12/10/76, 6426

Q. You indicated...that you believe sugar is the major factor causing tooth decay especially in young people...[D]o you believe that foods and candies high in sugar are perhaps one of the major causative factors here?

A. Yes, I think they contribute to the problem.

Alfano by Erickson, 12/10/76, 6422

The results of trials carried out in humans have also shown that those who chew Sorbitol chewing gum develop substantially fewer carious lesions than those who chew sugar-containing gum. There is clear evidence that sugar-containing gum is highly conducive to dental decay.

As the language of the proposed Rule now reads, Sorbitol-sweetened products would no longer be permitted to be advertised as "sugar-free" or "sugarless." Yet, the American consumer is becoming increasingly aware of the carie-causing properties of sugar and many consumers now seek sugarless or low sugar snacks, chewing gum and beverages, especially for their children. We feel that advertising of such products which implies that they are protective of dental health is scientifically well-grounded and presumably enhances consumer recognition of preferred snack-food items, and we feel also that any change in labeling which would make the recognition of these sucrose-free products less easy than at present would not be in the best interests of the dental health of the population.

Carlos, 11/30/76, 5365-6

One of the major nutritional problems in the United States today is dental caries (dental decay) which affects approximately 98% of the children.

Sugar intake, particularly sucrose, is the nutrient... that is most commonly associated with increased dental caries experience....There is also much evidence that frequent eating of even small amounts of sugar sweetened foods is a very serious dental health hazard....Another interesting bit of data that recently has been developed... is the strong correlation between the increase in consumption of sugar sweetened starch type snack foods and dental caries. This has occurred in spite of the fact that per capita consumption of sugar has not increased....

[T]he consumer, especially the parents and children who are watching television, should be informed that foods like confections, cakes, pastries, and other sugar rich

starch type foods (cereals, breakfast cakes, etc.) as well as soft drinks when eaten frequently especially between meals as a snack will jeopardize their dental health.

These consumers also have a right to know exactly what percentage of the food product consists of sugar.

From a letter from Dr. Abraham Nizel, Professor, Department of Oral Health Service, Tufts University, 4/11/76, to Robert Choate, CCMM

* * * * * * * * * * * * * * *

Having identified the physical and mental health issues related to food avertising in front of children, we now turn to suggested corrective actions which could contribute to a child's gaining nutritional knowledge early in life.

* * * * * * * * * * * * * * *

Q. What do you think are the prime sources of food information for today's one-to seven-year-old?

A. Well, obviously, certainly in this younger one to four, the information comes through the mother. Now, you want to know about the older one? ...I still see the mother as the gatekeeper who determines what food is available to the child. They do have a lot of expanding horizons as far as exposure to food is concerned, but the mother is the one who determines what is available for them to eat.

Q. Are the mother's food ideas always the best food ideas for the child to be adopting?

A. No.

Q. When one is the head of a Society of Nutrition Education, then is part of the problem to get to the child as well as to the adult if one wants to inculcate at an early age proper nutritional habits?

A. I think there are benefits to be derived from working with the mother trying to educate her as to what is the proper food to provide for the child.

Guthrie by Choate, 12/3/76, 5818-9

Q. Do you believe the food habits of the one- to three-year-old affect their attitudes towards food in later years?

A. I have seen no evidence to support that. I have seen many people theorize that this is the case, but not present any convincing data.

Guthrie by Choate, 12/3/76, 5818

I think a five-year-old could be given nutrition information. We are currently working on the development of curricular materials for preschool children through sixth grade. We obviously feel that there is some information that can be communicated to children....

Q. You used the term "basic understanding of nutrition." At what age do you think that this basic understanding of nutrition can start?

A. At a very elementary level. I think you can teach a child that the food they take in becomes part of them. What they eat determines their growth and development. You can demonstrate it very nicely with animal feeding studies, for instance.

Q. What age are we talking about?

A. Well, I think you recognize as well as I do there are a lot of individual differences in the age at which a child can grasp these sorts of things. I think a five-year-old could grasp the basic, very elementary concepts.

Guthrie by Choate, 12/3/76, 5820, 5821-2

To a certain sense all of us here with perhaps one exception, myself, have pretty much been abandoned to our fats, but for infants and children this is not true. This is the group that I think requires a great deal of information for the mothers.

Miller, 7/15/76, 553

In order for nutritional health of people...to be accomplished, people are going to have to be educated, not through taglines thrown onto product advertisements but through serious campaigns that may involve the media and the family and schools.

Ward, 11/30/76, 5317

I feel that there is a great deal that needs to be done through our school systems to educate people if the funds were available.

Sidles, 9/14/76, 1819

I believe that the primary fault lies with the lack of emphasis on nutrition education in the public schools and the paucity of nutrition education provided to our health professionals -- those to whom we turn when we have questions concerning nutrition.

Guthrie, 12/3/76, 5778-9

We don't teach nutrition in grammar schools and high schools; we don't even teach nutrition in medical schools so that doctors can actually go out and tell a person the correct details on how to eat to correct a particular disease.

Castelli, 12/1/76, 5399

Q. Doctor...you say..."If an advertisement is keyed on energy or synonymous terms, statements must be included indicating the number of calories in the usual serving of the food and some indication of what this represents in terms of usual needs for young children."

Is it your feeling that this would be useful information for the preschool children?

A. [Y]es...those who are, let us say, in an age group beyond three-and-a-half or four years of age prior to entry into school, let's say, five-and-a-half to six years.

In other words, my statement -- Dr. Harrison's and my statement is certainly directed to the issue that the child of three-and-a-half or four-and-a-half years of age and on up is certainly exposed to television advertising which, I think, bears on this issue, and I don't think that it is out of the realm of possibility to communicate in an intelligent fashion with a four-year-old and a five-year-old.

Owen by Sloat, 10/12/76, 2851-2

Q. Given your experience in this kind of a [atherosclerosis] study, do you feel that children form a group that special attention should be paid to in regard to this overall public health problem which you have testified on?

A. Yes, I would think so because children develop the habits of nutrition early in life. They copy the parents and they are, of course, greatly influenced by the society around them, including the advertisements.

Connor (Sonja) by Turner, 7/19/76, 874-5

It is important to provide children with information that is accurate at a young age because the types of knowledge that they acquire at age 8 or 10 or 12 regarding food do seem to persist and have implications for their adult behavior.

In fact, if a myth is learned intensely enough, [it] probably would be difficult to change that particular belief in later life.

Atkin, 9/17/76, 2628

I don't think we have good evidence of the educational potential of an advertising mechanism, particularly food advertising, but the fact that it does have some effect must be attested to by the fact that the food industry puts an awful lot of money into advertising....We're also told that television breaks are times when the refrigerators frequently open in response to ads.

Now, that's one kind of behavior modification. What we would like to do is to find a system whereby advertising can be bought for more pertinent uses such as for purposes of health.

Shank, 10/13/76, 3012-3

The TV commercial, as I have said, is a very powerful teaching device which possesses the potential to establish long-lasting concepts. Food advertisement is very likely to be able to teach whatever it wants to teach to whom is there. The varying or relative success of one food ad in competition with another is less likely to be dependent upon the quality, taste appeal or nutritional value of the food than on the degree to which the ad attracts, holds and directs attention to the primary message. That is, the use of the medium itself is a factor in the attainment of the message....From the vocabulary from a commercial message in a television program [children] can learn food information.... It follows too that [children] can learn desired concepts of nutrition and develop healthy food habits as efficiently as undesirable ones provided an equivalent effort is made by the [advertising] production houses concerned....

The weight of our research evidence derived from studies on commercial techniques applied to educational television suggests strongly that it is not the content of the commercial which is critical to the learning concept formation. Instead it is the process of presentation inherent in the commercial itself. Therefore, it can be argued that the commercial could be used to present equally effectively any specified product information without loss of buyer appeal, provided that there is an equivalent investment of intent, talent, time and budget.

O'Bryan, 11/15/76, 3286-7, 3296

If the estimates of television viewing alone by children is anywhere approximately 14,000 food commercials each year, the educational implications are horrifying at the present time, but the potential for nutritional education is absolutely enormous.

Bryan, 10/13/76, 3065

Food advertising is one of the important influences that determine consumer food and nutrition knowledge, attitudes and food selection practices, but food advertising has tended to emphasize almost any aspect of food but nutrition ...[T]he overemphasis on those attributes has tended to give a distorted picture -- to imply that these are the only reasons to select food. However, nutritional value is a vital reason for selecting food, and hence food advertising should do its share in conveying nutrition information.

Phillips, 7/22/76, 1464

I feel there is a responsibility of the manufacturer to contribute, to add this education because our children are getting a tremendous amount of education from television, much more, many more hours really than they get in school.

Q. Is it your thought that they should add it to the education through educational channels?

A. That is nice, and we have nice educational channels in Iowa, but it is not the ones that your children are watching. They do sometimes, but they spend more time watching other channels because they have spent more money on the commercials. Let's face it.

...I think the very heavy load falls on these people who are doing the advertising who are giving the children these ten messages per hour. A very heavy responsibility falls on them to include good effectual nutritional education because...like it or not that is where they are getting their education.

Sidles by Weil, 9/14/76, 1869
Sidles, 9/14/76, 1819-20

Q. I think you said that all consumers understand the meaning of the word calorie. Is that something that you said?

A. Not the scientific definition of calorie, no. They understand the word calorie as it relates to weight.

Q. Do you think that children, for example, would understand that?

A. The children use the word energy, "I need all that good energy, mommy," I just heard this the other day. It was just perfect. "I need all that good energy, mommy. Buy this cereal," and they picked up this very highly sugared cereal and they put it in the basket and the mother did not take it out and put it back on the shelf, so I assume

she went ahead and purchased it. He said, "I need all that good energy, mom," and she answered, "Oh, no, you don't. You have enough."

Q. Where do you think that child heard that information?

A. It was obviously from a commercial on TV. They wouldn't know. I don't even think they would know that that cereal gave energy unless somebody told them so. They didn't go over there and pick up an orange or an apple and say the same thing.

Erickson by Turner, 7/12/76, 161

I don't think a child, for example, understands the statement that energy is calories. It depends on the age of the child. Some of the children are very sophisticated in these matters. It would be there for the mother and this, after all, is the ultimate person that must determine this.

Miller, 7/15/76, 555

It seems to me that in the context of the young child, that the advertising industry, indeed, has a responsibility to advertise intelligently, as though they are dealing with an intelligent audience that can be educated properly...to some relationship between the energy value and the nutritional value of this particular food item.

Owen, 10/12/76, 2873

My point was that the term..."energy" is interpreted by various people in different ways, and I'm not at all sure that children or many adults, for that matter, understand that energy and calories are the same thing.

Harrison by Kushner, 10/14/76, 3224-5

Q. [Y]ou have expressed yourself and given your opinions as to how adults understand the use of the term "energy" in food advertising....And you have spoken of their confusion in that respect.

Have you performed any studies to determine the prevalence of that confusion?

A. Not in a formal scientifically selected sample type of way....I base that statement about the confusion on experience with counseling many individuals...about weight control and calories and energy, and one of the techniques that I've used many times with individuals is to present them with a list of nutrients and food components such as vitamins, minerals, carbohydrates, proteins, fats, calories...

and asked which one of those things provide energy....I can tell you that it's very common for vitamins and minerals to be identified...with producing energy, and it's a very common misconception that carbohydrates, protein and fat and calories even are not energy producers.

Harrison by Weil, 10/14/76, 3239-40

Q. Do you really believe that if a person is told that food energy comes from calories that he is not going to understand that, he is going to have to be told over and over and over again, is that your belief?

A. I think if you say it and you don't confuse them in the meantime, and throw in other things, I think that's the only meaning of the word, that energy is derived from calories. But I think the audience that you are talking to now, it's going to take a few years before you get a young enough audience that hasn't been exposed to all of the uses of the word energy, or misuses or misinterpretations, or whatever you want to call it....

Q. What do you mean by young enough audience, how young?

A. Well...I'm sure that there are five year olds that understand that sugar gives me quick energy, or that this is a high energy food....So you've got it quite aways ahead.

Nelson by Weil, 7/21/76, 1331-2

It is imperative that advertisements directed at children not be allowed to mislead in any way. Information must not only be technically truthful; it must be clear. And in my opinion this means in the context of the section of the rule to which I'm speaking that the public's confusion between energy and calories must not be exploited, and if a food makes a claim for energy, it should be said that energy is the same thing and nothing more than calories.

Harrison, 10/14/76, 3216

Q. Now let us turn to television advertising and I take it that it is your point that when a food advertiser makes a claim for food energy of his product, in a television advertisement, he should make both a disclosure that we have been talking about, and disclose the number of calories in a serving of [dessert], is that correct?

A. Yes.

Nelson by Weil, 7/21/76, 1332

Q. As a father and grandfather and as an expert, if only limited nutritional information can be conveyed to children, would you put a higher priority on transmitting caloric content information or nutrient content information or the nature of the fat content in food? Which of those might you think be most important for a child?

A. What do you mean by nutrient content?

Q. Protein, vitamins, and mineral content of food.

A. Well, that is a tough one. I would like to see all of them.

Wissler by Choate, 9/15/76, 2041

Q. As I understand your testimony, Mr. Choate, you believe that it is important when a discussion of calories is presented in a food advertisement directed to children to give some indication to the child concerning the percentages of the protein, vitamins and minerals this product may in addition supply; is that correct?

A. Correct....[W]ith the more sophisticated adults you can probably convey a great deal of nutrition information, particularly through repeated utterances, whereas with the most naive child you have to be very selective as to what can be said....

Can you alert children to the fact that there is something called nutrition; 2: Can you give them bits and pieces of this puzzle which will make them interested in the nutritional worth of a food and their nutritional health. 3. Can you tell children something about calories in a manner which will lead them to look for calories on a label, think about the total calories that one can consume in the course of a day, and what else ought to be consumed as well as those calories to maintain body health....[W]e want children to recognize there is something more than calories to be worried about or thinking about in food. We want children to recognize that all 100-calorie or 200-calorie foods are not identical in their nutrient worth. And somehow we would like to get over to children that [since] it is the satiety that comes from excessive consumption of calories which turns off one's appetite...one may very well satiate the appetite [without consuming enough] nutrients.

Choate by Van Brunt, 12/6/76, 5295-8

Q. [L]et me ask you to assume that the Commission adopts a regulation to this effect: that when an energy claim is made a statement has to be made in the advertisement that energy is calories or is measured by calories, or something to that effect, and a statement of the number of calories.

Do you feel that anything in addition to that is required in ads that are directed at children? And I ask you specifically whether more information should be disclosed, whether it should be disclosed in a different form, or whether it should be banned?

A. I would require additional information, the nature of which would be that more is not necessarily better in terms of caloric count for children.

Donohue by Donegan, 11/15/76, 3498-9

I have argued that a statement that a food will give you an energy boost is in fact information which will be accepted and learned by a watcher; that if this statement is a misleading statement or is not a full statement as to the nature of that energy component, the viewer has no way of knowing what other effects such intake of food may produce....

[T]he way in which it could be corrected would be to provide in the advertisement a statement of the actual nature of food energy....

Whatever is put in the ad and directed to the attention of the viewer in as powerful a medium as television will almost certainly have, on the basis in my experience of experimentation, the opportunity to be learned.

O'Bryan by Sloat, 11/15/76, 3381-2

Food advertising which carries supplementary and desired nutritional data can certainly be expected to teach this data to children or adults, but only if it follows the principles of high visibility, positive identification and attention retainment. Otherwise it may have a negative effect.

O'Bryan, 11/15/76, 3288

Q. Dr. O'Bryan, I would like to ask you to assume for a minute that the Commission does make a determination that when an energy claim is made in advertising a disclosure should also be made drawing the link between energy and calories and perhaps also stating the number of calories in the food. You stated earlier, much earlier in your direct testimony, I believe, that it is important to disclose that information in a manner of equal prominence to the claim itself....I wonder if you could give us some of the criteria that you feel are important to look at in assuring that the disclosure would have equal prominence.

A. Yes. The disclosure must have the same technical and creative quality that the other material possesses. It would have to be presented in as prominent and with as vigorous associational component as any other material which was thought to be extracted from the program.

It would need not to be placed in juxtaposition to a negative or associatively negative quality within the presentation. It would need to be backed by as high a quality mix and voice-over as the other information. It would need to be used with both audio and visual presentation as presented in one or the other. It would be very readily and easily overcome by a distracting material in the other modality, as well as that it would need to have no direct competing stimulus associated with it.

As an example, if we were to present a disclaimer...the attraction and attention of the viewer could easily be taken away by presenting in another part of the screen or in a part of the voice-over some high component quality of competitive viewing material.

As an example, if we would put a box with the caloric content or whatever you wanted to put in on the screen but at the same time showed a highly visible and important personage appearing in the top left hand corner of the screen doing something exciting and extravagant for the five seconds or whatever the material was on, the chances of that material being effective would be limited. It would need the same length of competition as the main message being presented.

As well as that, it probably would need not so much the same amount of air time, but at least the same ratio of impact to time as the other material had, and there is a ratio which can be worked out and built up and set....

Q. If for example the original claim appeared only in one portion of a television ad; in other words, either in the audio or in the video, would it still in your view be necessary that the energy calorie statement be in both audio and video?

A. It wouldn't -- primacy, the first appearance, and recency, the last appearance of the claim, would be a factor.... I think, however, that one would look at the degree of impact of the energy claim and match it at least with the degree of impact of the disclaimer.

Q. Is it important in your view that the disclaimer and the claim itself appear together -- in other words in the same time frame -- either that or the disclaimer appear immediately after the claim itself?

A. There would be a controversy on that question, technically. We have found that the thing used last is best recollected for people of low socio-economic scale areas and the material presented first tends to be better recalled by people at upper socio-economic levels.

There is a body of research on this, so that you may have to vary the presentation from one part of a series of ads to another part of a series of ads to get an appropriate balance.

Putting them back to back -- it is undetermined -- I couldn't from experience or interpretation give you a direct answer on that one. I think that definitely would need to be researched.

O'Bryan by Donegan, 11/15/76, 3389-92

Q. Do children recall food jingles?

A. Very high rate of recall. We presented...a jingle omitting the brand name, and...over half [of the children] could identify the brand name quite readily.

Q. Could they recall a caloric or nutritional related jingle?

A. If it was written by a skilled and creative copywriter, yes.

Atkin by Choate, 9/17/76, 2626

Q. If a child was told that not only does this food give energy but it has a specific number of calories, do you think from your experience that children would understand that; that it would make any difference at all?

A. That depends a great deal upon the age of the child. In terms of pre-school children, it's probably more important that the parent who has to mediate that purchasing behavior might have a clearer picture of what was going on.

Harrison by Kushner, 10/14/76, 3225

Q. Is there any particular age group or age range of children you are particularly concerned might construe a calorie claim to imply that more is better?

A. Yes....I would say probably by the age of seven or eight, because it is at that point we know that most of the psychological framework for the kind of person a child is going to become is already set.

Q. Well, if those habits were developed at an earlier age, then wouldn't it follow that additional information ought to be required in ads that are shown to children of ages younger than seven?

A. Yes. But I am saying by the time they have reached seven it is too late. It is never...too late, but it is going to make the job more difficult if you don't get them earlier. We ought to concentrate on those programs designed for very young children, including Captain Kangaroo and programs of that specific genre.

Donohue by Donegan, 11/15/76, 3500

Q. [D]id you or did you not state that you did not believe young children would understand caloric and nutritional information disclosures in food advertisements?

A. Certain young children would not, children intellectually incapable, and that is to suggest intellectually incapable by reason of birth or by reason of extremely young age.

Donohue by Van Brunt, 11/15/76, 3527

In our latest study...we found nested in a group of black children some confounding results which we couldn't identify. They were eight-year-olds which indicated surprisingly high levels of awareness where the rest did not. So we went back to the instructor in the classroom from which we pulled the children and said, "What has been going on in this classroom?"

And she said, "Because we just had a consumer unit in which we role-played commercials." Each child was supposed to assume a part. For example, one child was supposed to be a cereal box....She found that by role-playing...[the children's] skepticism could be raised sufficiently to obviously confound the results of our study. So skepticism does lead to particular ability to judge some sorts of puffed or deceptive claims.

Donohue, 11/15/76, 3482-3

[I]t seems to me that the people who need this information most, by which I mean children, underprivileged, perhaps the elderly, are the least apt to comprehend it, because they have the least command of nutritional language. And to those better educated people who -- where these words have some semantic value, I have the general impression that they are already there. They already know.

Harper, 12/13/76, 6743

Q. Does the showing of a good time or fun or fantasy help disguise the purpose of an ad to a child?

A. No question.

Q. Would the inclusion of caloric facts destroy the fun or fantasy aspect of such a commercial and reveal the commercial intent to children?

A. That would depend on the product and the creativity of those people who wrote the commercial. Not necessarily.

Donohue by Choate, 11/15/76, 3487-8

Q. When children observe a food advertisement with youthful figures bouncing, running, jumping, and otherwise acting with great vigor, is there a message suggesting high energy food in that portrayal?

A. In my opinion there is that message included.

Q. Could this be put on a proper footing by mention of caloric content of that particular food?

A. How do you mean put on a proper footing?

Q. Could children gain a more factual understanding of the energy content of that food if the calories in a serving were stated?

A. Yes, they could.

Atkin by Choate, 9/17/76, 2636-7

Q. You used the term, "highly resistant to erosion through memory loss." Is this phraseology applicable to food messages which sell on the basis of fun, fantasy, shape or other non-caloric and non-nutritional phrases?

A. Yes.

Q. If the same pattern of food messages that one sees on television today included caloric and nutritional facts in the same intensity as one sees today, would they be resistant to memory loss?

O'Bryan by Turner, 11/15/76, 3306

Q. Miss Charren, you state in your testimony that for ads directed at children where disclosures are required, when specific claims are made, the disclosures should be both in the audio and visual portion.

Do you feel that requirements should be necessary for all children or just children up to a certain age?

A. For all children.

Q. And could you elaborate on why you feel that's necessary?

A. It's difficult to make a cutoff point where children above a certain age would be sufficiently informed with just the visual disclosure, because children vary so much.

Charren by Donegan, 1/6/77, 7751

Q. Now, am I correct in understanding from your statement that you believe that children are capable of understanding nutritional information when it's presented in advertising?

A. Absolutely, yes.

Charren by Donegan, 1/6/77, 7752

[T]he more complex the concept you are trying to put across, the harder it is to get it across in one spot. It is an empirical question as to how much time you require to get across a given message. You try and find out whether you can do it successfully or not.

If you are thinking of a simple association, I have absolutely no doubt you can get that across to very young children very quickly within a few seconds, and if it is repeated a few times it becomes quite reasonably stamped in.

Q. Understanding those limitations, do you believe that nutrition education can take place within the format of a 30-second spot type announcement?

A. I would say some degree or some forms, certainly. I don't think you have to be in the area of nutrition education to say that there are certain kinds of things that in virtually every educational area lend themselves to that kind of format.

Ball by Choate, 11/19/76, 4577-8, 4590

The question is, can advertising be used to convey certain detailed nutritional information to the public and at the same time perform its fundamental economic function. It is my belief that the TRR, as now written, would severely compromise the commercial effectiveness of food advertising without materially improving the understanding of the public as to the nutritional values involved in a given food product.... [T]he translation of simple food energy claims into caloric values I don't think can be done in a sentence, certainly not in a phrase. To make sense, other related food values have to be discussed and this would tend to turn the food commercial concerned into a much more diffused communication, probably not suited to the short time concerned.

Harper, 12/13/76, 6707-8

Q. Is getting the child to like the ad a goal on the way to getting a child to think it will like the product?

A. I don't know if it is a goal of advertisers, but I do believe that the evidence shows that the more a child likes a commercial the more often they are likely to indicate that they like the product itself. So that there is a positive association between liking the message and liking the product that is portrayed from the message. And I think that this association is much more important with children than with adult consumers, for very often adults don't like ads but still there is a positive benefit.

Q. Would inclusion of caloric or nutrient information in that ad lessen such a liking?

A. Not necessarily. In fact, they actually could like an ad even more with this kind of information if it is presented in an enterprising fashion, which is quite possible with the use of effective techniques. For instance, we find that public service announcements which are usually presenting some kind of information are very often among the most enjoyed messages that children see on Saturday mornings. So that that kind of information, if it is done creatively, and effectively, can lead to liking....

Q. Can a graphic nutritional message be made likable?

A. Definitely can be.

Atkin by Choate, 9/19/76, 2623-5

Q. If there were a nutritional related figure or character, could children come to identify it as easily as they do Ronald McDonald or Trix' Rabbit?

A. I believe if the character had attractive attributes that there is no doubt that the children would come to identify it and like it, and therefore be more likely to retain the information that the character is reciting. There is a wide variety of promotional characters, and children seem to be highly familiar with them and generally favorable in their evaluation. So I think a similar kind of character that would be mentioning nutritional information probably could also be that successful.

Atkin by Choate, 9/17/76, 2625

* * * * * * * * * * * * * * *

Much of the testimony and many of the witnesses before the Federal Trade Commission seem to agree with Robert Choate, Chairman of Council on Children Media and Merchandising, that graphic portrayals of a food's nutritional worth could convey to children and many adults something about the caloric value and nutrient worth of a particular food.

* * * * * * * * * * * * * * *

Q. Do you find pictures a particularly useful way, in your experience as an advertiser, of communicating information to children?

A. Certainly....

Q. Is this a fairly widely held belief in the advertising profession, that pictures will communicate more about... food and food value than words, to children?

A. I would say so.

Q. Do you think that if there was an effort made to transmit useful and meaningful nutritional information to children that it would be useful to use pictures...?

A. In the right medium yes....Like commercial television...certainly programming that had that kind of content could be improved with the kind of message that a child can get easily.

Q. Do you mean get easily from pictures as well as words?

A. Right.

McClure by Turner, 7/13/76, 454-5

Q. Doctor, did you use any graphics or graphic representations in your television communication and if you did, did you consider that to be a meaningful part of the communication?

A. We did use that and we did consider it meaningful.

Farquhar by Choate, 11/19/76, 4492

Q. Do you believe that nutritional information can be conveyed through graphics?

A. ....Surely, whether it is nutritional information or other kinds of information...it can certainly be graphically displayed. If it is graphically displayed along with an audio

message that complements it, so much the better.

Ball by Choate, 11/19/76, 4591

Q. Do you think graphics can be used to portray any nutritional information to children?...

A. Yes, if it is done in [a] manner consistent with the kinds of information children can process at given levels of development, sure.

Donohue by Choate, 11/15/76, 3489

Q. Do you, in your experience with...advertising... have any ideas about how to communicate to children through graphics, nonword presentations and so forth?

A. My experience is limited primarily to nutrition education in kindergarten, first grade, second grade and so on. It is very graphic, learning by doing, pictures, the whole concept of looking at something is very, very important.

Briggs by Turner, 7/12/76, 73-4

Q. In communicating with families, including children, who have other than English as their primary language, do you find graphic symbols useful...?

A. Very much, yes.

Harrison by Choate, 10/14/76, 3221

Q. Do the "Readalong," "French Show" and "Sesame Street" find graphics useful in educational programming?

A. We rely heavily on them.

O'Bryan by Choate, 11/15/76, 3308

* * * * * * * * * * * * * * * * * * * *

One witness felt that nutrition education in a commercial would be counter-productive; some of industry's lawyers opposed even considering children and commercials.

* * * * * * * * * * * * * * * * * * * *

Based on our years of experience and masses of consumer research we would predict...for an advertisement attempting to extol the product and educate the consumer nutritionally ...a divided response to the messages with neither one properly understood....

On December 6, Dr. Choate, testified that his "Bionic Nutritional Robot" should be included in any TV commercials which might be viewed by children. While I don't consider myself an expert in children's advertising, I have done considerable research in that field and feel that his suggestion would impair, if not destroy the value of a commercial for both children and adults....

If you were trying to construct a 30-second commercial and had to add that much of anything, you would actually have no commercial left. He has written the commercial for you. You can't make the point you want to make. You are so busy demonstrating through the robot what has to be said for legal reasons.

Hoffer, 1/7/77, 8146-8

MR. WEIL: I would like to interpose an objection to the use, during this series of hearings, of the television commercials that Mr. Choate has circulated...yesterday....

Apart from my usual objection to the children's facet of these hearings...these particular commercials have been offered and the rest of us notified of Mr. Choate's intent only at the last minute...certainly not within the time that has been designated for advanced filings of intended testimony, and that's one major basis for my objection....

The other is that...with the exception of very few... I cannot see any relevancy to Phase One...or even for that matter, to other phases of the hearing as they have been described.

Weil, 10/13/76, 3085

MR. CHOATE: Let me invent a mythical situation which I think will answer this precisely.

If there was a storyboard in that group that said, "Pieces of candy sold separately," and an expert on child reception of television communication could document how that child read or absorbed that line which was differently from how adults would receive or absorb that line, I think that that would be germane to the rule since we are talking about placing a calorie identification after an energy claim to hopefully tell the public what is the caloric content of that product.

In short, if an expert on child interpretation of a video picture can portray that a child is either further confused or stays confused despite the description as to what is the caloric content or any other disclaimant that appears on the tube, I think that is germane to this rule, and we would try to bring that point out seeking how best to identify calories were this rule to be enacted....

MR. VAN BRUNT: Mr. Choate points precisely to the issue with which I have concern because if this type of testimony

is going to be offered, I would have needed to put in a great deal of effort to prepare on each individual ad based on what the prospective witness is going to say, and I will not be able to prepare to cross-examine effectively if this type of testimony is going to be offered concerning individual ads and that is, testimony on the perception of children.

MR. WEIL: It gets back to the problem that I raised originally, Mr. Dixon, of the tremendous extension of these proceedings if we get into the totally different area of children's perception of television advertising as distinct from adults...people who wish to prepare to cross-examine and to prevent rebuttal testimony in this totally different area will have approximately ten days to two weeks...in which to do all of that in this tremendously complex and comprehensive field....

It seems to me that it would extend these hearings tremendously in order to present people who wish to respond to this totally different area of evidence in the manner that they're entitled to do under the Act....

MR. DONEGAN: Mr. Weil talks as if preparation can only begin on a case involving children's perception of energy claims after Dr. O'Bryan's testimony is completed, and it seems to me from your ruling much earlier, it would be clear that the impact of these claims on children is as much in issue before the proceeding as the question as to how they affect adults, and so I think he's had every bit as much time to prepare the testimony that he might see fit to present in Washington as all of the other parties have.

10/13/76, 3093-5

* *

Finally, testimony was given on the actual mechanics of a graphic presentation, and some of the predicted behavioral responses on the part of the public.

* *

Q. How did you finally arrive at a useful graphic?

A. The children kept using the word computer -- a nutrition computer. And this concept excited the graphic artist....[W]e were trying to have a figure with a little bit of excitement, a little bit of motion which then would be looked at seriously by the children. And it was after... going back to the drawing board about 10 times after children told us what was wrong that we finalized on the approximate figure shown in the back of the testimony.

Choate by Erickson, 12/6/76, 5862-3

Q. You indicated in your summary that this sample graphic successfully communicated four points of nutritional information to young children. What are those four points?

A. That a food has calories and the calories can be measured or numbered.

Second, that a great many foods contain protein and that this is a measure of a food's worth.

That a great many foods contain vitamins, and the measure of the vitamins in a food is a measure of that food's nutrient worth.

And that a great many foods contain minerals and the extent that the minerals are in this [food] is a measure of the food's worth.

Choate by Erickson, 12/6/76, 5867

Q. You have suggested some standards for the conspicuousness with which the nutritional display would be shown. I would read that for the record.

That states that, "The advertisement shall conclude with a nutritional graphic display of not less than five seconds duration or 16 percent of the commercial's length, whichever is the longer. In the left side portion of the screen the total area of the graphic is to be not less than one-fourth the size of the total video picture. The setting of the graphic shall maximize the graphic's message."

First I would like to ask you generally, on what did you base these requirements and on whose advice and what background went into this?

A. The five seconds really was taken from the NAB's toy advertising recommendations where they...set aside five seconds at the end of a toy ad so that the toy could stand out in isolation by itself....

The 16 percent was arrived at because some advertisements are still 60 seconds long, and in such I would think that the exposure of this nutritional computer could be double five seconds, or 10 seconds....

Why the left side of the screen -- that is because Dr. O'Bryan says that is where children's eyeballs will pick it up first. Why to be a quarter the size of the total video picture? I would like to have this graphic representation...be of sufficient size to be seen by children watching a typical television set from a typical distance with the typical mis-focus that occurs with some television sets, but at the same time to permit the advertiser to continue his or her sales effort in a manner compatible with this graphic where the graphic message shall be maximized.

I am not calling for a total blanking out of the last five seconds of a 28, 29 or 30-second ad. I am saying that the two can be compatible but that the graphics message must be maximized....

Q. In addition to what you have already stated, was there any basis for requiring that the graphic be put at the end of the commercial?

A. You will remember, Mr. Donegan, that we have had a number of spokesmen who have designed educational messages

and some commercial messages. There seems to be some discrepancy as to whether the first five seconds of an ad or the last five seconds are the more memorable. I think, as I remember the testimony, that a little bit depends upon age.

So I guess I went again with the toy commercial decision by the NAB and thought that the end might be the easiest way to resolve that difference.

Choate by Donegan, 12/6/76, 5883-5

Q. Would you also require an audio disclosure of the caloric value of the food in the ad as well?

A. I believe that behavioral research would show that an audio explanation would speed the understanding of this graphic and probably should be on every time that the graphic is on....If this graphic were restricted to five seconds, I think audio language would have to be very very carefully studied, lest it just come out like such a speedy statement as to be totally incomprehensible.

Choate by Van Brunt, 12/6/76, 5941

Q. Do you believe that if your graphics symbol will be effective in communicating this nutritional information to children that it would also be effective in communicating this information to adults?

A. Absolutely. Even as food advertisers recognize that children can be persuasive on their parents to make certain food purchases after having viewed advertisements, I believe that children can be persuasive and prodding to their parents on their need for more nutritional information after having seen such a graphic.

Choate by Van Brunt, 12/6/76, 5936-7

Q. In your topic number six, Dr. Atkin, on purchase requests, apparently something like 70% of cereal advertisements produce a child/parent communication. Would nutritional data in the ad affect that percentage?

A. I think that nutritional information presented in an [advertisement]probably would increase the amount of communication between child and parent, both as the child initiates the question to the parent concerning the nutritional value of the product and perhaps, as the parent joins the child to watch the commercial and sees that as an opportunity to discuss the substance of a food product rather than some of the factors that children usually used to judge food.

Atkin by Choate, 9/17/76, 2632-3

Q. Assume an adult sees [the graphic] -- do you think this will convey the kind of information you are seeking to convey to an adult as well?

A. Certainly it will convey basic nutrition information to the less...nutritionally sophisticated adult. I believe that people who have taken many courses in nutrition education would find it beneath them, boring and sufficiently inaccurate that they would want more data....

Q. Let's assume an adult...saw the symbol presented on television. Is it your testimony that he could...look at that and intelligently absorb the information presented there?

A. I believe most adults, if they are at all familiar with bar graphs, would pick up the caloric information.... The bar graph, I believe, is most useful in conveying caloric information to those who are not thoroughly familiar with numbers. I think there is a certain part of our population that more readily reads numbers than bar graphs, so I think the two can be together....[W]e certainly have the setting there that both manners of communicating can be incorporated into the same picture.

Choate by Van Brunt, 12/6/76, 5937-40

We found in the Feshbach study that children with preorientation responded better to the graphic and number explanations than to just the number alone. Whether this is typical of the country as a whole I don't know, but it certainly suggests where the next research should be done.

Q. With respect to preorientation, do you not believe you could achieve the same result with adults?

A. Probably.

Choate by Van Brunt, 12/6/76, 5941

Q. If an effort were made to convey nutrition education type messages through graphic form, can they be tested ahead of time to find out what is the likelihood of their reaching down to, say, even the six, five, or four-year-old child?

A. I am quite confident that adequate testing could tell you what impact it is having on various subpopulations within our larger population.

Ball by Choate, 11/19/76, 4591-2

I think that some of the advertising of foods viewed by children connote to children that by and of themselves

they bring health. So many advertisements for foods in front of children use to a maximum fun, laughter, gaiety, as they portray the food in front of children, that I do believe research would point out that children not only have trust in the message, but they have trust in the food, and believe it has great benefits for them. And I think that any such portrayal of foods which either state or connote that the food brings by and of itself health should be accompanied by a nutritional graphic providing the children with some nutritional basis upon which to judge the food....

I would urge the food industry to adopt this graphic idea instantly to clarify for all of its customers what were really the most important nutritional points of the food they were trying to sell them....I certainly would like to see the Feshbach graphic in all food advertising at all times of the day in all media, in magazines and newspapers and on the back side of boxes.

Choate, 12/6/76, 5886, 5931

EDIBLE TV:

YOUR CHILD AND FOOD COMMERCIALS

PART II

A synopsis of the testimony
of Robert B. Choate, President
Council on Children, Media and Merchandising
before the Federal Trade Commission
Fall, 1976

and

A report on
A Developmental Study on the Use of Graphics in
Conveying Nutritional Information
by

Norma Deitch Feshbach, Ph.D.
Tricia S. Jordon, M.A.
Arline S. Dillman, M.S.Ed.

1976

Mr. Choate's testimony:

The issue before us is food advertising and the possible national benefits to be derived from altering certain patterns of food promotion. The goal is improved nutritional awareness in the public -- including children. We can prove children are prime receivers of food advertisements -- mostly through the medium of television -- and will urge that the Federal Trade Commission's Trade Regulation Rule on Food/Nutrition Advertising afford children certain protections, inasmuch as the child is particularly vulnerable to food commercial persuasions and establishes food habits at an early age. There are over 40 million children under 12 in the United States.

We feel that many children over 6 understand the word "energy" as a capability to exercise, work or play. The word "calorie" is far less familiar. More calories may sound like more physical energy, and hence more attractive. Caloric information is important, but for a child, it is only one step forward. To provide children with a useful interpretation of the word calorie, and to consider what impact it will make on them, we believe a food's calories expressed as part of a day's caloric needs will be far more meaningful.

Children, being children, have a further need. If led to believe calories are the only basis upon which to judge food, children will think all 100 calorie servings of various foods are equally beneficial. This, for a child, would be deceptive. We thus feel pressed to introduce the concept of nutrients which the Federal Trade Commission has put off for consideration to Phase II of these hearings. We ask that the Federal Trade Commission amend the proposed Rule so that its goals will benefit children as well as adults.

Commercial communication to children takes at least four forms: intentional, general, peripheral and inadvertent. We define <u>intentional</u> advertising as that for a product developed for a child using phraseology to appeal to a child for retail sales to children, perhaps through a parent. <u>General</u> advertising includes messages for all ages for products that may appeal to all ages and thus be bought by all ages; the child is considered only one of many potential customers. <u>Peripheral</u> advertising here is defined as messages for products customarily used by adults but the messages are placed on programs watched by many children as well as adults; the children, it is thought, will repeat the name, the jingle, the message to an adult

and thus reinforce whatever impact the message may have on nearby adults; the purchaser will probably be an adult. Inadvertent advertising occurs when an adult product is advocated in an adult manner to an audience that is not considered to have child members; it probably results from apathy, or intentional dismissal of the idea of a child as a viewer or consumer.

Examples of these are:

Intentional	General	Peripheral	Inadvertent
Toys	Foods	Detergents	OTC Drugs
Candy and Gum	Toothpastes	Household Polishes	Vaginal Products
Some Cereals	Sports Equipment	Child Medication	Caustics
Sodas/Juices	Some Snacks	Radio & TV Related Products	Chain Saws
Some Snacks	Sodas/Juices	Promos for Adult Evening TV Programs	Adult Theatre Films
TV Specials for Children	Entertainment TV Specials		
Fast Food Stores			

In all of these, the viewing child plays a role, sometimes alone, often accompanied. The parent may participate by nodding approval, giving the money, neutrally observing the transaction at the cash register or actually making the purchase. In such cases, the adult reinforces the message of the commercial by seeming to approve its intention.[1] The child probably has no concept that he/she is involved in a triangular advertising-selling proposition in which his role in relation to the other parties is uncertain and legally ill-defined.

Of course, from a lawyer's point of view mere exposure to such solicitations is not harmful per se. From a behavioral standpoint, every commercial message may have a pro- or anti-social implication. The real question is how the child deals with the information that is imparted to him/her by thousands of annual sales messages. How do children process those messages, particularly food messages? Do their reactions shape life-long attitudes toward the product, a class of products, nutrition, or health?

Children do view many food advertisements because of their TV-watching habits. In the fall of 1975, the six largest child audiences were on weekday evenings. 12 of the top 15 child-drawing programs occurred during the evening. Weekend morning advertising generally drew a younger audience; almost without fail children were a majority of the audience only on weekend mornings.

In April 1975 we used "Barcumes" to show total network advertising patterns and 39 Saturday/Sunday daytime patterns:

TABLE 1 - Total Network Advertising

	3 Network Commercial Totals	
Cereals	8166	
Candy & Gum	4083	
Shortening & Oils	3208	
Cookies & Crackers	2129	1975
Desserts	1733	First
Non-carbonated soft drinks	1637	Nine month totals
Carbonated soft drinks	1387	
Meats & Poultry	1328	
Macaroni & Spaghetti	1031	
.....	....	
.....	....	
Vegetables	571	
Citrus	311	
Cheese	320	

TABLE 2 - Saturday/Sunday Daytime

Cereals	3832	
Candy & Gum	1627	
Cookies & Crackers	841	
Non-carbonated fruit drinks	582	
Macaroni & Spaghetti	208	
Cakes, pies, pastry	104	
Desserts	80	
Citrus	78	1975
Carbonated soft drinks	63	First
Ice Cream	53	Nine month totals
Soups	43	
.....	..	
.....	..	
.....	..	
Meats & Poultry	2	
Vegetables	1	
Cheese	1	
Milk, butter, eggs	0	
Vegetable juices	0	

Notice that of all the foods advertised over television in the United States, cereals lead every other category by an almost 2:1 ratio. In food advertising before the youngest child audience, cereals dominate to an even greater degree. Sweet foods predominate in the top seven classes in both audience analyses. Presweetened cereals themselves dominate, for those with the highest sucrose content --

between 37.8 and 55.1 percent -- frequently have high advertising budgets. Vegetables and cheeses are ignored.

Fast food restaurants also heavily advertise to children. Table 3 shows the network 9 month advertising patterns of 3 major chains, with delineation of the commercials aired on weekend daytime:

TABLE 3 - 1975

	Weekend Daytime Commercials		9 Month Total Commercials
McDonalds	398	out of	812
Burger King	274		480
Kentucky Fried Chicken	110		557

Of particular interest is McDonalds. Local franchise holders sponsor local spot advertisements while the parent company sponsors network commercials. The combined 1975 budgets -- $55.3 million for spot and $36.9 million for network -- make McDonalds one of the heaviest and most frequent advertisers voicing messages to young children.

Since children feel some influence from advertising in all media, we have drawn some advertising budget estimates from Advertising Age, August 23, 1976. In their analysis of the 100 leaders' media expenditures in 1975 they list the major food companies. Note the emphasis on television:

TABLE 4

AD RANK	COMPANY	TOTAL ($000)	% of Total Dollars: Newspapers	General Magazines	Farm Pub.	Spot TV	Net TV	Spot Radio	Net Radio	Outdoor
2	General Foods Corp.	157,124.9	5.1	6.5	--	33.2	53.8	1.3	0.1	--
12	General Mills	69,724.1	3.0	11.7	--	38.5	43.6	3.2	--	--
19	Nabisco Inc.	65,692.5	3.2	3.7	--	18.2	74.5	0.2	0.1	--
20	McDonald's Corp.	62,436.1	--	0.6	--	55.3	36.9	3.3	2.0	1.9
21	Ralston Purina Co.	58,251.5	5.2	9.3	1.0	20.0	62.1	1.5	--	0.9
22	Kraftco Corp.	57,302.4	5.0	21.2	--	30.7	36.1	4.4	1.9	0.7
26	Kellogg Co.	49,369.2	8.1	3.7	--	26.3	61.4	0.5	--	--
29	Norton Simon Inc.	47,547.5	5.8	27.3	--	25.3	35.7	1.6	--	4.2
36	Pillsbury Co.	36,306.7	3.1	6.8	--	25.1	61.3	3.0	0.3	0.4
39	Nestle Co.	35,613.7	9.7	2.4	--	30.6	56.4	0.8	--	--
41	Campbell Soup Co.	35,012.8	7.4	11.0	--	29.8	41.4	6.9	3.5	--
42	Borden Inc.	34,322.8	9.0	7.3	0.3	36.7	36.3	7.8	2.7	0.4
44	Standard Brands	33,168.5	11.7	10.1	--	40.6	19.2	12.6	3.5	2.3
50	Carnation Co.	29,214.4	3.2	1.4	0.4	26.3	62.6	6.1	--	--
52	CPC International	28,219.3	4.4	11.5	--	51.8	29.9	1.5	--	0.9
56	Quaker Oats Co.	26,897.5	8.1	10.1	--	32.3	48.8	0.7	--	--
74	Thos. J. Lipton Inc.	21,052.9	6.2	11.2	--	38.6	41.7	2.1	--	0.2
78	H. J. Heinz Co.	19,519.8	6.5	7.5	--	39.2	46.6	0.2	--	--
80	Beatrice Foods Inc.	18,833.1	12.3	4.0	3.3	56.2	9.6	13.1	1.4	0.1

- Advertising Age Aug. 23, 1976

To study who advertises selectively to whom, we have made an analysis of patterns of advertising. We chose three sample periods during the Fall 1975 quarter for this analysis: We analyzed 13 Saturdays, 9:30-11:30 a.m.; 13 Sunday evenings from 7:00-9:00 p.m.; and 13 Monday nights from 9:00-11:00 p.m. On Saturdays, we expected children to be a majority of the audience; on Sunday evenings they would be less than a majority but still a significant part of the audience; on Monday nights adults would predominate. During all three periods some adults and some children would be in the audience. Among the sample findings:

> General Food's Tang was advertised 24 times on Saturday mornings to once each for Sunday and Monday evenings;
>
> Kellogg's Pop Tarts appeared ten times on Saturday mornings but not on the evening shows;
>
> Nabisco aired its Cream of Wheat once during the Monday evenings; but 16 commercials for Chips Ahoy, 12 for Fig Newtons and 16 for Oreo cookies were to be seen on Saturday mornings;
>
> Quaker Oats used 58 commercials to stress Captain Crunch Punch Crunch on Saturday mornings in one quarter, but advertised its vastly superior cereal, Life, only once, and that on a Monday night;
>
> Kraft advertised with a pattern so that 55% of their Kraft Food Candy commercials showed up when children were a big factor in the audience, but slotted its cheese ads so only 7% would have been seen by many children.

Dr. Charles Atkin, Dr. Scott Ward and Dr. Robert Liebert and R. Poulos have excellent published studies on children's perceptions of advertising.2/ While they observe different reactions they all found reactions; children respond to television advertisements. Dr. Joann Galst has further supportive evidence for these FTC hearings; she shows that children's responses to food advertisements impact on parents as the children try to influence food purchases. Others have confirmed this.

Thus, I think it safe to say: The food industry seeks to influence children with its food advertisements, and they are affected. Children communicate their food desires and influence food selections as a result. By aiming certain products of dubious nutritional worth

without nutritional information at young audiences, food companies seem to take advantage of their nutritional naivete; the lack of nutritional information -- including calories -- in their advertisements compounds children's vulnerabilities. It is an unfair practice.

A number of witnesses testified in these proceedings on the nutritional vulnerability of children. Drs. Briggs, Jordan, Levine, Connor, Tepperman, Wissler and Paul had strong comments in San Francisco and Chicago. Obesity, early developed fat cells, and even cholesterol concerns were aired. Drs. Owen and Bryan in Dallas expressed many of the same concerns, but pointed out the particular nutritional vulnerabilities of certain ethnic and disadvantaged groups in the south and southwest. In Washington, many witnesses had comments on the young public's nutritional health, and the apparent excess sugar in many diets, often a contributing factor in obesity and dental caries. 3/

Non-medical and business people have taken cognizance of the public's vulnerability. For example, the Heinz Corporation's Board Chairman, Henry J. Heinz II voiced his concerns in 1974. In a contribution to Impact of Science on Society, he wrote:

> We are a nation of nutritional illiterates. Despite a wealth of scientific knowledge of nutrition, too many of us do not know what a balanced diet is, and are ignorant of the essential nutrients we need and the foods that contain them. We have an abundant food supply yet our eating habits are deteriorating. And it is not just the poor who are affected, though lower-income families undoubtedly fare less well nutritionally than the average. 4/

A 1965 USDA study gives support for Mr. Heinz's statement. In comparisons of nutrient shortages in the diet of the U.S. population, the USDA discussed Family Income vs. Percent Deficient Nutrients: 5/

TABLE 5
FAMILIES SHORT 4 OR MORE NUTRIENTS, IN RELATION TO FULL NRC STANDARDS

Family Income	% Deficient
Under $3,000	21%
$3,000 to $4,999	15
$5,000 to $6,999	16
$7,000 to $9,999	12
$10,000 plus	11

In Heinz's article, the author suggested, "...the food and beverage industries...should follow policies of scrupulous accuracy in advertising and labeling."[6] Mr. Heinz thus recognizes that a large segment of the U.S. population, being at risk, is particularly vulnerable to advertising which does not upgrade diets. We concur. Children are nutritionally vulnerable, particularly poor children.

In September 1972 the Office of Child Development in HEW outlined to the FTC the steps of cognitive development which might apply to commercials. Since our citizens watch television from the age of one, the OCD, building on Dr. Jean Piaget's findings, believes that:

> The television screen (particularly color TV, since babies are attracted earlier to color than to form) is likely to gain an infant's attention months before they can understand what is going on. This neuro-physiological make-up of human beings, coupled with an early opportunity to watch television, would make it easy for babies to become "addicted" to watching the set until they are old enough to be able to do other things.

The OCD goes on citing Glatt, Spencer and Ward, to say that:

> Children will respond to and remember fragments of information that are often repeated, spoken by real or animated authority figures, or that seem to satisfy an impulsive need. The latter may be an explanation for children's fascination and recall of food commercials.

This concern for children's attitudes was reflected in Capitol Hill hearings before the Senate Select Committee on Nutrition and Human Needs on June 27, 1976. Dr. Theodore Cooper, Assistant Secretary for Health, Department of HEW, said:

> Since food patterns are established in infancy, parents and other caretakers of infants and young children must play a strong role in determining nutritional health of children. Emphasis should be given to helping parents understand the nutrition needs of children and how best to meet them while, at the same time, developing sound food habits. And there's a real biological basis, I might say parenthetically here, for seeing to it that excesses are not introduced as a feature of the food habit process in the young.

Later he went on to say:

> Obesity constitutes a very serious public health problem in the underprivileged and economically disadvantaged...

And later:

> I know of no condition where the elimination of obesity wouldn't be a beneficial public health effort.

Later, having a discussion with Senator McGovern over the WIC program wherein McGovern asked him for a summary of advice on nutrition, Secretary Cooper replied, "My first advice would be to eat less." As a second priority, he included, "...reducing our preoccupation with sweet things."

Then Dr. Beverly Winicoff, Assistant Director of Health Sciences at the Rockefeller Foundation appeared as a witness. She said, "We must first learn that [more] and [better] do not necessarily proceed hand in hand.... it is clear that children who become fat have a very much greater likelihood of being fat adults."

Then Ex-Secretary of Health, Dr. Phillip Lee, presently Director of Health Policy Programs for the School of Medicine of the University of California in San Francisco interjected his remarks:

> We get virtually all our nutritional education through commercials in a food-for-profit industry and that does not provide us with the information people need to make informed choice about a health-promoting diet.

Then Senator Percy chimed in:

> I think your last sentence really in a sense summarizes the whole intent and purpose of this Committee. We have tried to provide a forum through public hearings in the U.S. Senate to provide the technical guidance and advice that the public needs to offset the day-by-day pounding and drumming of commercials that condition us from as early as two or three years of age, to eat what we are told to eat, whether it is good for us or not.

Sometime later, Senator Hubert H. Humphrey was commenting on the usefulness of communicating to entire families through children. He used them in a political sense, he said, with great success, and it would probably work on nutrition:

> Kids are the media, that is the way you get through. Adults have already made up their minds, most of them are hopeless by the time they get beyond 21 years of age.

He followed this with the observation that maybe what he was doing was repeating the Lord's phrase that "A little child shall lead them."

We note that most commercial law is based on the concept of a reasonably prudent consumer interacting with those who sell. But children, almost by definition, are reasonably imprudent. Thus in a commercial transaction special precautions must be taken to avoid an unfair or deceptive practice. With younger children, the very existence of a commercial's selling intent may not be understood.

For the purposes of these hearings it does not matter how much food children actually buy, or whether they buy foods or not, they receive the food advertising communication from sponsors. The young are open-minded receivers of food messages; they are relayers of food messages; they are absorbers of food messages; because they are particularly naive on nutritional subjects, they are left unprotected when a food promotion avoids mention of nutritional worth, including calories.

Programming of children is no accident. Sponsors plan carefully to gain the child as a direct consumer, or as a salesperson within the home. My testimony before the Consumer Subcommittee of the Commerce Committee of the U.S. Senate, on February 28, 1973, entitled, "The Selling of the Child," delineated how methodically food advertisers research to encourage children's consumption of their products.

What is the result of all these suggestions implanted in the nation's children? Witness Joann Galst reveals that in her survey children were successful in 45% of their purchase influencing attempts and that television viewing was positively correlated with purchase influence attempts at the supermarket. Dr. Susan Sharaga has shown the more television a child watched at home, the greater his/her reported preference for and consumption of heavily advertised food products, the poorer his/her nutritional knowledge and attitudes, and the lower his/her knowledge of the validity of nutritional claims in television advertisements.[7] Dr. Gayle Nevill has stated, "...the younger children are more prone to believing invalid nutritional claims in food commercials and...they make the most requests for food purchases."[8] Sally Dussere, who extended the work of nutritionist Dr. Virginia Beal of the University of Massachusetts, has written, "...the more television viewing children did, the more likely they were to eat heavily sugared cereals, the more often they ate between meals, the more total snack foods they ate, the more they ate candy and chips, and the more often they ate empty calorie foods."[9]

For those who would proclaim that mothers should protect their children from such practices we refer to the study of Columbia University's Dr. R. Lehmann entitled, "Nutritional Knowledge, Attitudes and Food Consumption Patterns of U.S. Female Heads of Households."10/ He states that, "Nutritional knowledge varies widely across the sample with very few people extremely knowledgeable in an objective sense. Put differently, a substantial fraction of the sample is mis-informed about nutrition." In his Table 1, under Section II -- Nutritional Information Sources, Dr. Lehmann notes some interesting observations in answer to his question about the relative importance of sources for nutrition information:

	No Answer	"None"	"Very Little"	"Some"	"Quite A Bit"	A Tremendous Amount"	Mean	Rank
Books	3.7	20.6	21.0	35.3	14 9	4.5	2.60	5
Magazines	3.2	8.7	12.6	44.9	26.3	4 4	3.05	3
Labels on the packages food comes in	3.7	[illegible]	16.5	43 6	26 4	4.0	3.07	2
Your mother	7.3	[illegible]	16 4	21.8	12 0 ←	3.7	2.20	10
Other family members	6.0	34.7	23 8	26 7	7.2	1.6	2.12	11
Friends	5 5	22 4	26 5	36.8	8.1	0.6	2.34	8
Doctors	5.0	29.6	22 4	28.8	11.2	3.0	2.32	9
TV programs	4.9	19.6	25 0	38.8	10.3	1.4	2.46	7
TV advertisements	4.8	17.8	27.1	39.1	10.1 ←	1.1	2.47	6
Newspapers	5 2	12.9	20.7	44 1	15.5	1.5	2.71	4
Your own experience	4.1	4.3	6.2	[illegible] 4	39.3	10.7	3.48	1
Courses in school	5.4	50.9	9.1	16 1	11.1	7.4	2.10	12

Interpretation: Personal experience is by far the most important source of nutritional information with labels on packages and magazines next most important. The importance of school courses, other family members, doctors, and friends is rated very low. Whether this reflects unavailability or lack of expertise is not clear.

Note how few cite television commercials as a source of nutrition information. Note further how few cite their mothers.

The State and Federal governments spend millions trying to awaken the public about nutrition. Food company materials, some promotional, some educational, swamp our schools. Trade organizations such as the American Dental Association, the Cereal Institute, the National Dairy Council, and the National Canners have printed educative materials to appeal to children. A recent Library of Congress report

lists some 35 organizations publishing such materials. They seem to fail in the face of massive, non-nutritional advertising.

There are few food company executives, like Mr. Heinz, who want "scrupulous accuracy" in food commercials. To them it is akin to killing the golden goose. It need not be. With proper research the food industry could find a means, perhaps graphic, of revealing to children a food's nutritional worth even while advocating the product. Food companies heavily research how to communicate their sales message. A similar effort to communicate the nutrition message would yield results.

Resistance to nutritional information in commercials may stem from the belief that the subject is too dull and complicated; or that only one message can be delivered in a good advertisement; or that insufficient time exists within a 30 second commercial. We have learned that food products sold with the assistance of premiums often omit information regarding nutrition. Dr. Charles Atkin pointed out in Chicago:

> A premium offer was contained in one-fourth of the ads, generally consuming 10 to 15 seconds of the half-minute message. Premium information tended to displace nutritional information; just 13% of the ads featuring a premium made reference to nutrition, while 42% of food commercials without premium promotion talked of nourishment or vitamins.

Almost half of the communication time is thus not only non-nutritional, but the premium, having no bearing on the product, may distract from the actual food message. In this regard it is anti-nutritional.

We suggest that premium promotion give way to nutritional promotion.

The argument that more than one point cannot be stressed in an advertisement is refuted by a food ad with a premium message. Inescapably it has two or more messages. Dr. Atkin in Chicago testified at some length on the prevalence of multi-message commercials. "Clustering" and "piggy-backing" are well known advertiser terms for multiple message communication . They go on all the time.

To those who deplore nutritional content in food advertisements because it is too complicated or too dull, we point to present day pet food commercials. They are often loaded with nutritional data. (If pets could

understand television, they would have greater access to nutrition education than most of the population.)

In recent years, "eight important vitamins" has become a familiar phrase in cereal advertisements. We have reason to doubt this phrase really means something to children. Dr. Liebert has shown in other types of advertisements secondary communications can confuse or mislead.11/

Nutrition messages within food commercials then seem possible. The question becomes "How?" Dr. Atkin in his Chicago testimony emphasized the care that must be taken with such efforts. Recognizing the repetitive nature of food advertising, he reported that in a multiple sophistication level message, the older and sharper children may learn quickly, while the younger and slower children may absorb the easy parts of the message first, and the more complicated parts later. If we are considering a calorie and nutrient message, this learning capacity must be researched carefully.

In analyzing how to cope with these hurdles, it is important to remember food commercials are highly repetitive -- even more so if each contains a similar graphic message. Our estimates show children, particularly young children, potentially exposed to 8,580 - 13,260 commercials for edibles in a typical year. These may be for only 80-90 products, representing less than 10 product categories. Hence the repetition factor is high. Repetitive messages, as pointed out by Drs. Atkin, O'Bryan and Samuel Ball, often become "overlearned" messages." They are hard to displace from memory. But if these "overlearned messages" contain the a-b-c-'s of nutrition education, they can provide a basis for prudent food selection throughout life.

Can advertisers accommodate special conditions for advertising in front of children? They claim to meet the special requirements of the NAB Code for Saturday advertising. They claim to honor certain constraints in their OTC drug advertising. They observe a 5 second "tombstone" period (without motion) at the end of every toy commercial. They claim to restrain depiction of certain horror, sex or violence scenes as required by the Family Hour. There is ample evidence that broadcasters and their advertisers could conform to special constraints, particularly when children are involved.

A comment on the tangential benefits of nutrition communication to children: If graphics are to be used, those with impaired hearing would gain. They cannot hear an audio description. Some families in a bi-lingual situation would benefit. One sees many graphic signs in

the nation's Southwest and in Florida, designed to help the Spanish-speaking.

To ascertain how best to communicate nutritional information, we consulted with experts in television communication to children. Noting that children even younger than three can indicate food choice, but certainly cannot read, we pondered the role of graphics in conveying nutritional information to this audience.

We made a review of research relative to children and TV advertising, particularly advertising of foods. With the assistance of Dr. George Comstock, the Rand Corporation's editor of the 5 volume study "Television and Human Behavior," we sought out and obtained the consultant advice of Dr. Norma Feshbach of UCLA. We also obtained the consultant advice of Dr. Seymour Feshbach, and for graphic input we sought the talents of artist Milton Zolotow.

Following early brainstorming sessions in late May and early June, 1976, a mode of graphic communication was decided. There were many variables. We explored these with children drawn from summer camps in June and July. There were many revisionsand modifications as children indicated their interests and areas of confusion. We settled on a pilot approach.

A note of caution: Since we wanted to communicate as much to the youngest children as the eleven and twelve year olds, we had to make some compromises. In the first pilot stage we had wanted to show protein, six vitamins and two minerals. Using letters in the middle of a graphic, we confused the children. The mass of letters confused them, even more than the specific representations. We thus turned to bar graphs, only showing percent of RDAs. We had to merge the 6 vitamin values; thus a food with 30% vitamin A, 30% vitamin C and 30% vitamin D, but no Bs, would score 90/600th, or 15%. For minerals we looked for calcium and iron percentages. Thus our bar graphs for vitamins are based on a possible cumulative score of 600, and for minerals, 200. We took these new materials to the children.

Again, children fed back their reactions, and we listened carefully. A stylized robot/computer seemed most interesting to the children. That became our focus. During these experimental stages, Dr. Norma Feshbach developed the proper protocol and procedures. We wanted careful work, even under the tight time restraints.

Starting in September 1976, the Feshbach team went into the field. A number of specific questions guided the implementation of this phase of the investigation.

1. At what grade level can children remember and accurately reproduce the information presented in a food graphic, including number of calories, and proportions of protein, vitamins and minerals?

2. At what grade level can most children evaluate a food on the basis of an understanding that nutrients are good for the body and/or that too many calories are bad for the body?

3. At what age/grade level can children utilize two dimensions of the graphic (both calories and nutrients) to evaluate a food?

4. Is a graphic presentation of calories superior to a numeric presentation of calories in terms of children's performance?

5. At approximately what grade level do children begin to extract information from the graphic without an orientation/training session?

What follows is the research team's Report No. 2 -- A Developmental Study of the Use of Graphics in Conveying Nutritional Information. Dr. Norma Feshbach, Tricia S. Jordon and Arline S. Dillman are the authors.

* * * * * * * * * * * * * * * * * *

INTRODUCTION

This phase of the project entailed the field testing of the graphic designed and developed for the purpose of this investigation. On the basis of findings generated in the exploratory and pilot study phases, a one-slide version of the NUTRITION COMPUTER was concluded to be the most effective mode of presentation.

The purposes of this phase were manifold:

1. To compare two different conditions (versions) of caloric display -- one numeric, the other graphic;

2. To determine whether children, after exposure to a brief orientation/training session, can
   a. remember, and reproduce the quantities presented in the graphic
   b. interpret the graphic representation of quality
   c. evaluate foods on the basis of graphic representations
   d. consider more than one dimension in evaluation of food; and

3. To determine the approximate grade level at which children begin to be able to extract information from the graphic without prior exposure to a pre-orientation session.

Method

Subjects

The subjects for this phase of the study included 88 children, characterized as predominantly white middle class, ranging from four to ten years of age. The eight youngest children (the 4 year olds) were selected from a university nursery school while the remaining 80 children attended kindergarten through the fourth grade in a local elementary school in this same neighborhood. In all, there were eight children at age 4, and 16 children in kindergarten through fourth grade, equally divided as to sex.

Materials

The materials used in this study consisted of two sets of slides, (6 slides in all), two wooden models, and two sets of generalization pictures (a total of twelve pictures). All of these materials utilized a graphic, in the form of a stylized robot, placing food in its mouth.

Slides: In each slide, a picture of the food being ingested was clearly visible and positioned adjacent to the robot. The nutritional information of the food was displayed on the chest area of the robot. Proteins, vitamins and minerals were computed as the percentage of the minimum daily requirement contained in one serving of the advertised food. These values were displayed as stripes on a horizontal bar graph, accompanied by the actual percentage figure. Each stripe on the bar graph represented 5% of the minimum daily requirement. The stripes were colored orange for protein, blue for vitamins, and yellow for minerals. The calorie information was displayed above these three bar graphs. For the Numeric Condition, the number of calories was represented as a numeral followed by the letters CAL. For the condition in which calories were graphically displayed, a jagged green line on a horizontal bar graph with a range from 0 to 300 was used to represent the number of calories in a specific food.

A set of three slides, each slide representing one of three foods (hot dog, candy bar or portion of cereal) for each of the caloric representations (Numeric or Graphic) was prepared and used (making a total of 6 slides in all).

Models: Two wooden models of the NUTRITION COMPUTER robot, each representing one caloric indicator (numeric or graphic) were also constructed. The contents of the bar graphs could be changed by manipulating small wooden slides....

Generalization Pictures: A set of six generalization pictures was prepared for each of the two calorie indicators. These consisted of the NUTRITION COMPUTER displaying the nutritional and caloric values for six hypothetical, unpictured foods. The values are shown in Table I. Two pictures were considered to represent "good" foods (low caloric and high nutrient content), two pictures were considered to represent "bad" foods (high caloric and low nutrient content), and the remaining two pictures represented ambiguous foods (high caloric/high nutrient content and low caloric/low nutrient content), this latter category of generalization pictures requiring a more advanced level of cognitive comprehension.

TABLE I

VALUES FOR GENERALIZATION PICTURES; NUMBER OF CALORIES AND PERCENTAGE OF MINIMUM DAILY REQUIREMENT FOR PROTEIN, VITAMINS AND MINERALS

Picture	Condition I				Conditions II and III			
	Cal	P	V	M	Cal	P	V	M
1	100	50%	100%	95%	90	55%	100%	95%
2	125	45%	100%	90%	100	45%	100%	95%
3	350	5%	10%	5%	290	5%	5%	10%
4	425	5%	5%	10%	260	5%	10%	5%
5	100	5%	10%	5%	80	5%	5%	10%
6	485	55%	95%	100%	290	50%	95%	100%

Design

Three treatment conditions were studied. The treatment variables were the mode of presentation of the caloric information on the NUTRITION COMPUTER and the presence or absence of an orientation session.

The graphic for Condition I (Numeric with Orientation) utilized a numerical representation of calories. Protein, vitamin, and mineral content were expressed both graphically

and numerically in terms of the percentage of the minimum daily requirement for each nutrient contained in a standard serving of the food. An orientation session preceded the test session. Forty children were tested under Condition I: four girls and four boys at each grade level from kindergarten through fourth grade.

Condition II (Graphic with Orientation) utilized an identical format to Condition I for the representation of protein, vitamin and mineral content, i.e. both graphic and numeric. Calories, however, were represented graphically on a scale from 0 to 300, indicating the number of calories present in one serving of the food. An orientation session also preceded the test session. Thirty-two children were tested under Condition II: four girls and four boys at age 4 and at each grade level from kindergarten through grade two.

Condition III (Graphic without Orientation) utilized the same graphic as Condition II. However, the children did not participate in an orientation/training session. Sixteen children were tested under Condition III: four girls and four boys in grades three and four.

Age/grade levels for each Condition were selected to identify minimum age/grade for comprehension of the materials and concepts under each Condition.

The experimental design is presented in Table II and the distribution of subjects by Condition and age/grade level is presented in Table III.

TABLE II

EXPERIMENTAL DESIGN, SHOWING THE PROCEDURE AND CALORIC REPRESENTATION FOR EACH CONDITION

Condition	Procedure	Caloric Representation
I	Orientation	Numeric
II	Orientation	Graphic
III	No Orientation	Graphic

TABLE III

DISTRIBUTION OF SUBJECTS FOR EACH CONDITION AND AGE/GRADE LEVEL

Condition	Age/Grade Level					
	4 yr.	K	1	2	3	4
I		8	8	8		
II	8	8	8	8		
III					8	8
	8	16	16	16	16	16

Procedure

Each child was seen individually. Under Trial I the children in Conditions I and II participated in a short orientation/training session which included a brief discussion of the body's requirements for calories, protein, vitamins and minerals, as well as an explanation of the NUTRITION COMPUTER. This brief orientation was followed by the presentation of three slides representing the three foods. The slideswere projected on a screen. The projected size of each slide was 19 inches diagonally. A voice overlay accompanied each slide, indicating the number of calories in one serving of the food. The child was given practice in reproducing the content of the slides using the wooden model of the graphic. The child was then asked to judge the generalization pictures and to indicate the basis upon which the decision had been made. Feedback about the appropriateness of his/her responses was given throughout this orientation/training. This sequence constituted the children's first trial experience with the graphics.

Under Trial II the child's understanding of the graphic was then assessed. Each slide was presented for five seconds. After this 5 second period, the slide was removed and the child was then asked to evaluate the food and to explain his/her evaluation. The generalization pictures were then presented, again requiring the appropriate sorting. This second sequence of activities is referred to as Trial II....

Children in Condition III did not participate in the orientation/training session. They were told to imagine that the projected picture followed a TV commercial about a particular food. They were then asked to reproduce and evaluate the slides and to evaluate the generalization pictures as in Trial II of Conditions I and II above.

RESULTS

Content Reporting/Reproduction

Data relevant to the questions presented above were analyzed. The first question was, "At what grade level do most children remember and accurately reproduce the information presented (number of calories; proportion of protein, vitamins and minerals)?" The data for calorie reproduction of the figures on the slides for the three foods for Trial 2 are presented in Table IV. The total number of correct responses by condition for each age/grade level is indicated. A response was judged correct if the child verbally reported the exact number of calories

or if a child's graphic reproduction on the wooden model was ± 10 calories of the correct number. Each child responded to three slides; eight children were tested in each age level. Therefore, the total possible correct responses for each grade level tested under each condition is twenty-four.

TABLE IV

NUMBER AND PERCENTAGE OF CORRECT CALORIC REPRODUCTIONS (EITHER VERBAL OR GRAPHIC) FOR ALL CONDITIONS AND AGE/GRADE LEVELS

Age/grade level	Condition					
	I		II		III	
	N	%	N	%	N	%
4 yr.	8	33.0	11	45.8		
K	8	33.0	9	37.5		
1	15	62.5	14	58.3		
2	13	54.1	15	62.5		
3	13	54.1			7	29.5
4	15	62.5			13	54.1

An examination of the percentage of correct responses indicates that, with an orientation session (Conditions I and II), more than half the responses were correct for children from first through fourth grades. Without an orientation session (Condition III), this level was not achieved until fourth grade.

Examination of the number of children correctly reproducing the number of calories for at least two of the three foods (Table V) also indicates that from the first grade through the fourth grade, with an orientation, half or more of the children were able to reproduce the correct calorie number for the presented foods. Without the orientation, this level was achieved in the fourth grade.

TABLE V

NUMBER OF CHILDREN CORRECTLY REPRODUCING CALORIC INFORMATION FOR 0, 1, 2 OR 3 FOODS, FOR ALL CONDITIONS AND AGE/GRADE LEVELS

Age/ Grade	CONDITION I Numeric/ Orientation				CONDITION II Graphic/ Orientation				CONDITION III Graphic/ Non-orientation			
	0	1	2	3	0	1	2	3	0	1	2	3
4 yr.					2	3	1	2				
K	4	1	2	1	1	5	2	0				
1	1	1	4	2	1	2	3	2				
2	2	2	1	3	1	2	[illegible]	3				
3	2	2	1	3					2	5	1	0
4	1	1	4	2					2	0	5	1

The data for reproduction of protein, vitamins and minerals are presented in Table VI. These data appear in the form of error scores. The absolute difference between the number of stripes for each child's response, as shown on the wooden model or verbally reported, and the correct response, as shown on the slide, was calculated for each food for protein, vitamin and mineral content. These scores were averaged for each age/grade for each condition. In cases where a child did not respond to a request for reproduction of protein, vitamins or minerals for a food an error score of 10 was assigned. Means for combined error scores of protein, vitamin and mineral responses for each age/grade were computed.

TABLE VI

MEAN ERRORS IN REPORTING PROTEIN, VITAMINS AND MINERALS BY AGE/GRADE LEVEL AND CONDITION (ERRORS DETERMINED BY THE ABSOLUTE DIFFERENCE BETWEEN THE NUMBER OF STRIPES ON THE SLIDE PRESENTED AND THE NUMBER OF STRIPES REPORTED BY THE CHILD)

		Age/Grade					
	Nutrient	4 yr.	K	1	2	3	4
Condition I Numeric/ Orientation	P		2.16	1.58	.54	.27	.27
	V		3.41	2.33	.79	.62	.56
	M		2.79	1.50	.75	.64	.79
	$\bar{X}$		2.78	1.80	.69	.51	.54
Condition II Graphic/ Orientation	P	2.90	1.83	2.95	1.45		
	V	3.00	2.04	2.58	1.04		
	M	3.08	3.12	2.86	1.95		
	$\bar{X}$	2.99	2.33	2.79	1.48		
Condition III Graphic/ Non-orientation	P					7.00	3.87
	V					5.91	3.66
	M					6.83	3.83
	$\bar{X}$					6.58	3.78

The table indicates that errors were generally low, suggesting that even the youngest children can reproduce the information regarding proteins, vitamins and minerals. (The mean error for four-year-olds was 2.99 stripes out of a possible maximum mean error score of 17.88.) In addition, a developmental trend for each condition is suggested. The older children for each condition were more accurate than the younger children.

Understanding of Calories and Nutrients

The second question considered children's understanding of nutrients and calories: "At what grade level can most children evaluate a food on the basis of an understanding that nutrients are good for the body and/or that too many calories are bad for the body?" Evidence for this understanding comes from an analysis of the children's judgments of the unambiguous generalization pictures. This data is presented in Table VII.

TABLE VII

NUMBER OF CHILDREN CORRECTLY EVALUATING THE UNAMBIGUOUS GENERALIZATION PICTURES ON TRIALS I AND II FOR ALL CONDITIONS AND AGE/GRADE LEVELS

Age/Grade	Condition					
	I		II		III	
	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2
4 yr.			2	6		
K	3	7	4	7		
1	6	7	7	7		
2	5	6	8	7		
3	8	7				2
4	6	6				6

For conditions I and II, at least 75% of the children at all age/grade levels correctly judged the pictures on the second trial. (Given a generalization picture, and asked if the food was a "good" food for your body or a "bad" food, 3/4 of the children answered correctly.) The youngest children (four-year-olds and kindergarteners) showed improvement from Trial One to Trial Two. The third graders in Condition III performed at a lower level than third graders in Condition I, while the fourth graders were identical across Conditions.

Calorie/Nutrient Relationship

The third question was designed to tap an understanding of the calorie/nutrient relationship: "At what age/grade level can children utilize two dimensions of the graphic (both calories and nutrients) to evaluate a food?" Data to support the existence of an understanding of this interrelationship was drawn from the children's verbal responses regarding the justification of their evaluation of a food. These responses were primarily to the generalization pictures, especially to pictures five and six, the ambiguous foods (high calories/high nutrients and low calories/low nutrients). Each child was rated by three experimenters as to his/her understanding of this interrelationship. Typical positive-rated responses were:

"So much calories is bad, but so much of protein, vitamins and minerals is good." (Picture 6, first grader, Condition I)

"It's not as good as [food] 1 because of the calories." (Picture 6, third grader, Condition I)

"Too many calories, but these (protein, vitamins, minerals) are good." (Picture 6, four-year-old, Condition II)

"Calories are OK; protein, vitamins and minerals are too little." (Picture 5, four-year-old, Condition II)

The data are presented in Table VIII.

TABLE VIII

NUMBER OF CHILDREN USING BOTH CALORIE AND NUTRIENT INFORMATION IN EVALUATING THE GRAPHIC REPRESENTATION OF FOODS

Age/Grade	Condition		
	I	II	III
4 yr.		5	
K	0	5	
1	1	7	
2	4	8	
3	4		1
4	5		5

The results clearly indicate that children in our sample as young as four years (in Condition II) were able to comprehend the calorie/nutrient relationship. In addition, more younger children in Condition II evidenced understanding of the calorie/nutrient relationship than in Condition I.

Graphic vs. Numeric Calorie Display

The fourth question dealt with the mode of display of the calorie figure: "Is a graphic presentation of calories

superior to a numeric display of calories?" Data from Condition I (numeric) was compared with data from Condition II (graphic).

A comparison of the calorie reproduction data (Tables IV and V above) indicates very similar numbers of children and percentages of correct responses for the two conditions. Protein/vitamin/mineral reproduction (Table VI) appears to be slightly more accurate for Condition I than for Condition II. The data indicating understanding of use of calories or nutrients as single dimensions for evaluating foods (Table VII) also show no differences between Conditions I and II.

The dramatic difference is in the area of understanding the calorie/nutrient relationship (Table VIII). Based on this analysis, the graphic representation of calories was judged to be superior to the numeric mode of presentation.

Use of Orientation/Training

The final question dealt with the effect of the orientation/training session: "At what grade level do children begin to extract information from the graphic without an orientation/training session?" The data from Condition III was compared with Condition I (it should be noted that the mode of presentation of calories was also different for these conditions).

For calorie reproduction (Table IV), the third graders in Condition III (no orientation) gave fewer correct responses than those in Condition I (orientation). The difference in the fourth graders was not as great. The number of third graders correctly reproducing the calorie figure (Table V) is lower in Condition III, but the figures for fourth grade children are close.

The reproduction of protein, vitamins and minerals (Table VI) is less accurate for both third and fourth graders in Condition III than third and fourth graders in Condition I.

The evaluation of the generalization pictures (Table VIII), a measure of understanding calories and nutrients as separate dimensions for judging foods was poorer for third grade children in Condition III than for third graders in Condition I. For the fourth grade, the numbers of children in Condition I and III correctly evaluating the foods was identical. Similarly, the number of children understanding the calorie/nutrient relationship was lower

for Condition III third graders than for Condition I third graders, while the fourth grade figures are identical.

These data indicate that at the third grade level, children in our sample were beginning to extract some relevant information from the graphic without an orientation. By the fourth grade, the level of understanding was the same for both conditions, although the protein/vitamin/mineral reproduction was poorer for those children who did not receive an orientation.

Children in our sample, using the materials and procedures as outlined above, were easily able to utilize the graphic representation of caloric and nutrient content to evaluate foods. With the orientation/training session, children at all age/grade levels tested were able to remember and reproduce the proportion of protein, vitamins and minerals with little error. Over one-half the children from grades one through four could reproduce caloric content. Children at all age/grade levels tested could utilize at least one dimension (nutrients and/or calories) to evaluate foods.

With a graphic caloric display, even the youngest children in our sample were able to understand and utilize the complex calorie/nutrient relationship to evaluate foods. The graphic representation of calories was judged superior to the numeric representation because of this positive effect on understanding the calorie/nutrient relationship.

Without the orientation/training session, children at the third grade level were beginning to extract some relevant information, but were lower in both reproduction of information and in understanding of concepts than children who had experienced an orientation/training. The only observable effect of the orientation for the fourth grade children was a small superiority in reproduction of protein, vitamins and minerals.

Several levels of understanding are represented by this data. The reporting/reproduction of caloric, protein, vitamin and mineral content demonstrates ability to match and to discriminate. It does not necessarily give evidence for understanding the concepts.

The use of caloric and/or nutrient information to judge foods is indicative of some understanding of the concepts of calories and nutrients. The data (Table VIII) suggests that older chidren demonstrated this level of understanding in the first trial with the generalization pictures, while the younger children (four-year-olds and kindergarteners) required two trials.

Further, children in the youngest group sampled (four years) were able to understand the complex relationship of calories and nutrients and base judgments on these two factors. This is a very sophisticated level of understanding. The graphic mode of presentation for calories improved performance at this level, but was also associated with a slight increase in errors in protein/vitamin/mineral reproduction.

The protein/vitamin/mineral reproduction was more accurate in Condition I than in Condition II. We may speculate that because the calories were less salient in Condition I, more attention was paid to the protein/vitamin/mineral display, thus leading to greater accuracy in reproducing this information.

In summary, children in our sample were clearly able to learn to understand and use the information presented in a graphic form to make judgments about food. A developmental trend is suggested by the data. The younger children were less accurate in reporting/reproducing the information and required two trials to accurately evaluate foods on the basis of at least one dimension. The most important finding is that children at all age levels in our sample were able to learn to comprehend the complex relationship of calories and nutrients and use both these dimensions in evaluating foods.

This preliminary study should not be considered as a definitive statement of the best or only way to present nutritional information to children in a graphic form. This study does, however, present evidence that young children can learn and utilize nutritional information presented graphically.

FOLLOW UP PROCEDURE

Approximately one week after the initial field situation, children in the kindergarten, first and second grades were retested on a set of generalization stimuli. The latter consisted of three previously administered and six new generalization pictures. During this procedure no slides were administered nor was any instruction, explanation or assistance provided to the children.

Purpose

The purpose of the retest was to determine whether young children who had been previously exposed to nutritional information, could apply this information at a later date to new combinations of food values. (Six new pictures.) Only children who participated in Condition II (graphic indicator of calories with orientation), were administered the retest. (One child was absent at each grade level during the retest, resulting in a sample of 21 children.)

Results

The results are quite striking. For the six unambiguous stimuli, which clearly can be classified as either a bad or good food, of the total 126 administered stimuli, 114 or 90% were correctly classified. Only one kindergarten child was unable to classify correctly at least four of the six stimuli. Six of the seven second graders, five of the seven first graders, and five of the seven kindergarteners correctly labeled all of the six pictures appropriately.

An analysis of the extent to which the children understood the calorie/nutritional food value relationship reflected an impressive degree of understanding. One can infer that the children had apparently learned the principle during the field test a week earlier. Six of the second graders, six of the first graders and five of the kindergarten age children understood good foods had high nutrients relative to their caloric value while poor foods had low nutrients relative to their caloric value. The children similarly conveyed the understanding that too many calories can be "bad for your body."

Conclusion

The retest results provide rather impressive evidence of the feasibility of utilizing a graphic, of the type tested in this study, to communicate to young children the nutritional value of food products advertised on television.

* * * * * * * * * * * * * * * *

Mr. Choate's testimony resumes:

Thus we have the report of the research team. In all of this we merely sought the potential for graphic portrayal of nutrition information. We do not claim to have found the best graphic; we do not claim to have analyzed every variable within the graphic concept; we do not claim to have the sole idea for communicating to children. We realize the FTC has contemplated graphics elsewhere. We realize our graphic plan would gain from PSAs explaining basic nutrition concepts.

Obviously, graphic communication of relative nutritional worth can provide children with some basis for judging and selecting a food.

Under optimum conditions the perfect graphic would reach down to 4-5 year olds as well as to older children; it would convey up to seven nutritional facts for prudent food selection; it would be meaningful in print as well as video form; it would be acceptable to parents as well as nutrition educators. Most of these goals are testable in clinical settings.

Some of the goals may have to await professional consensus; certainly the priority of nutritional facts useful for children should be an early subject of discussion. Other pointers which await national consensus include optimum protein, carbohydrate and fat content proportions; the risks of various types of fat consumption; and optimum nutrient levels. While these discussions take place we feel secure in recommending that children be alerted to the nutritional density of foods -- the caloric content compared with the protein, vitamin and mineral worth.12/

Assuming that a nutritional graphic can be standardized to represent the calorie/nutrative value of hundreds of foods, and assuming it appears in television food advertisements, children will ask question in the beginning. A supportive campaign in preschools and schools would be particularly helpful. PBS and Sesame Street could help explain. PSAs on commercial television could also help -- as would a back-of-the-box cereal industry effort. After children have seen their first 500 such graphic symbols, we would presume that the information represented in those symbols could become a bit more sophisticated, for siblings will pass the word down, and the older children will pass the word to their elders. As each stage of sophistication is changed, the graphic should be pre-tested and post-tested for its meaning to children. While we have confidence in children's ability to learn sophisticated systems through multiple exposure -- witness their ability to understand Monopoly or batting/pitching averages -- we believe adults can make gross misjudgments of how children learn, and hence we ask for pre-testing.

We suggest this method of communication can teach our children to help us select foods. Thus it would be wise to include adults in some of the pre- and post-testing.

We know that a nutrition graphic could be incorporated into television food advertisements, without the disruption of future ad campaigns or broadcasters' commercial time allocations. But the Council's research is only a small beginning. Much more sophisticated research is needed on methods of changing the nation's nutritional apathy and ignorance. A broader national sampling must be included. Other graphics should be explored.

The burden now rests with the Congress and the Executive Branch. Leadership is very much needed, and the provision of research funds is essential.

REFERENCES

1/ Liebert, Robert M., in a statement before the United States House of Representative's Subcommittee on Communications of the Committee on Interstate and Foreign Commerce, Serial No. 94-53, July 16, 1975.

2/ Atkin, Charles K., "The Effects of Television Advertising on Children: Summary Abstracts of Eight Research Investigations," 1975.

Liebert, Robert M., and Rita Poulos, "Unintentional Negative Effects of Food Commercials on Children: A Case Study," MARC, Inc., 1975.

Ward, Scott, Levinson and Wackman, "Children's Attention to Television Advertising," E.A. Rubenstein, G.A. Comstock and J.P. Murray, eds., Television and Social Behavior; Vol. 4, Television in Day-to-Day Life: Patterns of Use, Washington, D.C., G.P.O., 1972.

3/ Briggs, G., and Helen Ullrich, "The General Public," in U.S. Nutrition Policies in the Seventies, 1973.

4/ Heinz, Henry J. II, Impact of Science on Society, Vol. XXIV, No. 2, 1974.

5/ U.S.D.A. Booklet, ARS 62-17, Table 20, 1968.

6/ Heinz, loc. cit.

7/ Sharaga, Susan Joy, "The Effect of Television Advertising on Children's Nutrition Attitudes, Nutrition Knowledge and Eating Habits," a thesis presented to the faculty of the Graduate School of Cornell University, August, 1974.

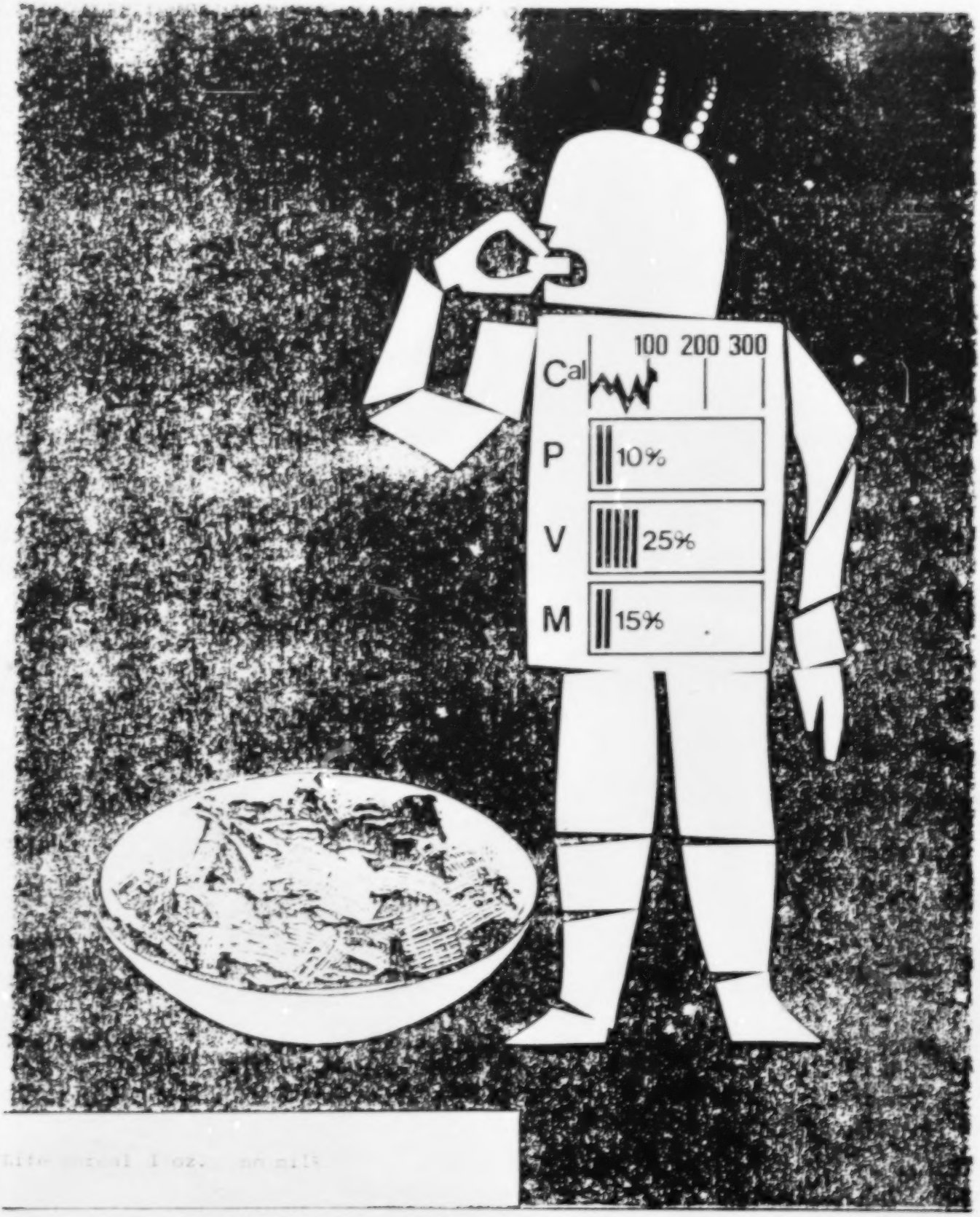
8/ Nevill, Gayle, "The Impact of Television Advertising on Children's Food Opinions and Practices -- An Exploratory Study," a thesis presented to the faculty of the Graduate School of Cornell University, May, 1973.

9/ Dussere, Sally, "The Effects of Television Advertising on Children's Eating Habits," a thesis presented to the Department of Health at the University of Massachusetts, 1976.

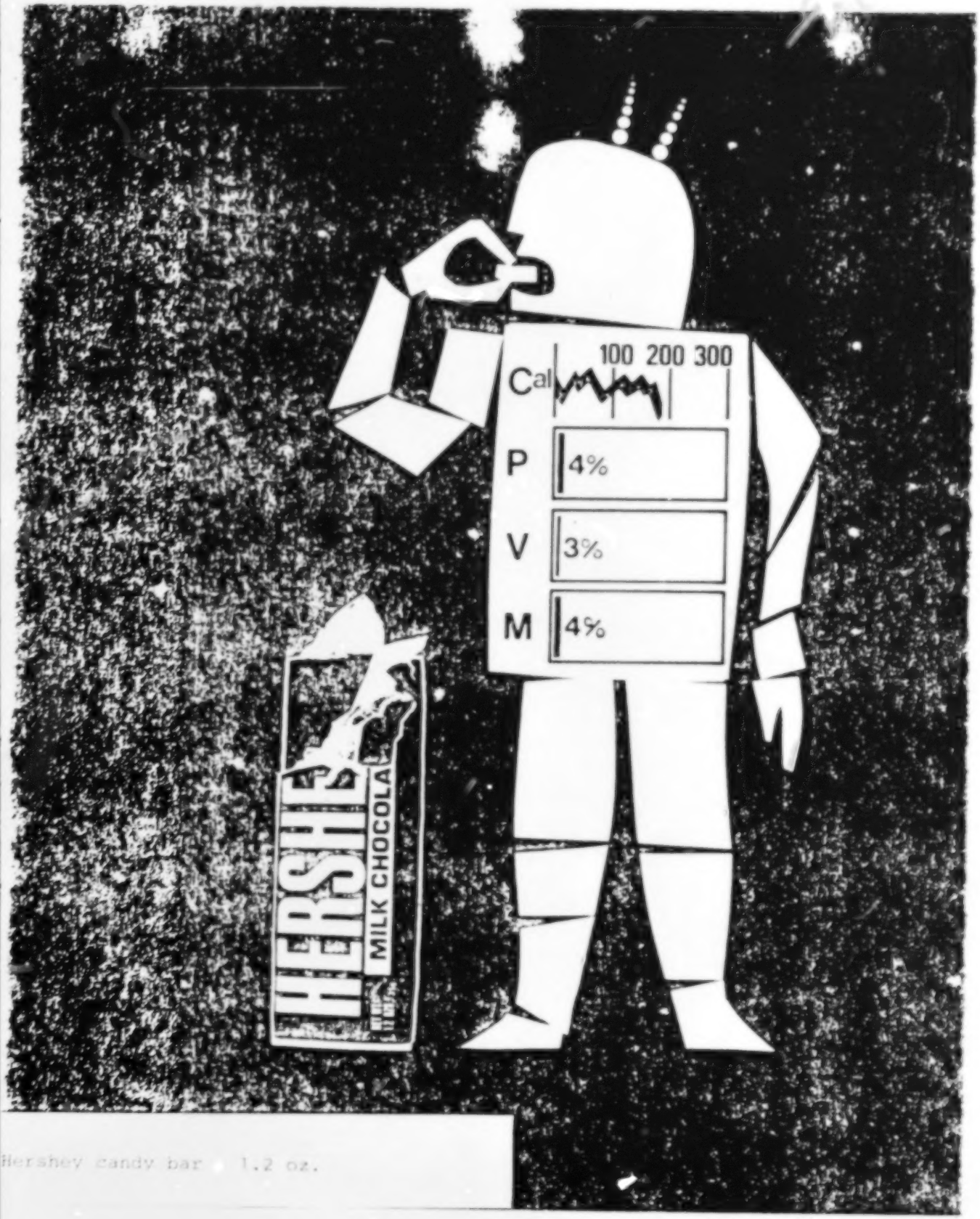
10/ Lehmann, Donald H., "Nutritional Knowledge, Attitudes and Food Consumption Patterns of U.S. Female Heads of Households," Research Paper No. 121 for the Food Research Center of Columbia University, 1976.

11/ Liebert, Robert M., Diane E. Liebert, Joyce N. Sprafkin and Eli A. Rubenstein, "Effects of Television Commercial Disclaimers on the Product Expectations of Children," Occasional Paper 76-8, Brookdale International Institute, Stony Brook, New York.

12/ Hansen, R. Gaurth, Ann W. Sorenson, Bonita W. Wyse and Arthur J. Wittwer, "Using the Nutrient Density Index of Nutritional Quality to Determine Guidelines for Fair Advertising Practices," Utah State University, April 30, 1976.


100 200 300
Cal
P
10%
V
25%
M
15%

100 200 300
Cal
P
V
M
Coca-Cola



Hershey candy bar • 1.2 oz.